



U.S. NAVAL MOBILE CONSTRUCTION BATTALION FOUR



DEPLOYMENT COMPLETION

Report

DEPLOYED AT
CAMP ADENIR-RVN
APRIL 1969-DECEMBER 1969

U.S. NAVAL MOBILE CONSTRUCTION BATTALION FOUR
FLEET POST OFFICE
SAN FRANCISCO, CALIFORNIA 96601

MCB4/KCK:kr
5213
Ser

From: Commanding Officer, U.S. Naval Mobile Construction Battalion
FOUR

To: Commander, Naval Construction Battalions, Pacific Fleet

Subj: Deployment Completion Report; submission of

Ref: (a) COMCBPACINST 5213.1E
(b) COMCBPAC OPORD 7-69

Encl: (1) Administrative Summary
(2) Equipment Summary
(3) Training Summary
(4) Communications Summary
(5) Ordnance Summary
(6) Labor Distribution Summary
(7) Construction Operations Summary
(8) Functional Components Summary
(9) Supply Summary
(10) Lessons Learned Summary
(11) Civic Action Summary

1. This report, covering U.S. Naval Mobile Construction Battalion FOUR's 1969 deployment to the Republic of Vietnam, is submitted as enclosures (1) through (11), in accordance with reference (a), as required in the performance of reference (b).

2. Employment status. In accordance with reference (b), NMCB FOUR was deployed to Camp Adenir, Danang, Republic of Vietnam, from April 1969 to December 1969. The principal objective of this deployment was accomplishment of construction tasks in support of U.S. Military Forces. The Battalion was under the operational control of the Commander, THIRTIETH Naval Construction Regiment. While performing the construction mission, the Battalion maintained its own unit defense and retained the capability for rapid deployment of the Battalion or portions thereof in support of military operations.

3. Unit Movements

28 March 1969 - At 0500Z, the MCB FOUR Advance Party of 5 Officers and 95 Enlisted Men departed Point Mugu, California, on a MAC contract jet bound for Camp Adenir, Danang, Republic of Vietnam. The party arrived in Danang at 0345Z on 29 March 1969.

2 April 1969 - Detail ECHO was dispatched to Quang Tri, RVN, to begin operation of an asphalt batch plant and ramp offload facility.

18 April 1969 - At 1145Z, the movement of the MCB FOUR Main Body began from Point Mugu, California, to Danang, RVN. On 24 April 1969 at 1100Z, the unit movement was completed. A total of 639 MCB FOUR officers and men and their gear were airlifted in five C-141 aircraft and two DC-8 aircraft.

20 April 1969 - 37 additional MCB FOUR Alpha Company personnel departed Danang on a C-130 aircraft for the Detail ECHO site to work on asphalt production.

27 April 1969 - Detail FOXTROT was dispatched to Dien Ban, RVN, to continue construction support to the Republic of Korea Force located in that area.

5 May 1969 - Seabee Team 0410 moved from the Construction Battalion Center, Port Hueneme, California, where they were in training to Vietnam beginning their eight month deployment. The team arrived in Saigon on 5 May 1969.

3 June 1969 - Detail FOXTROT moved to Hoi An, RVN, to begin reconstruction of the CAG II compound.

17 June 1969 - Detail GOLF was dispatched to Hill 65, RVN, to build cantonment facilities for the 7th Marines.

21 June 1969 - A detail with airlift equipment departed Camp Adenir, Danang, RVN, to work on the Thoung Duc airfield extension.

26 June 1969 - Detail INDIA was dispatched to the Republic of Korea Marines camp in the Hoi An, RVN, area to build cantonment facilities and soil cement roads.

1 July 1969 - Seabee Team 0411 moved from the Construction Battalion Center, Port Hueneme, California, to Thailand where they began their deployment.

30 July 1969 - The Airlift Detail returned to Camp Adenir after completing their work.

15 August 1969 - Detail GOLF returned from Hill 65 by truck convoy.

24 August 1969 - A well-drilling detail was airlifted to Thoung Duc airfield to drill a deep well.

25 October 1969 - Detail FOXTROT returned by truck convoy to Camp Adenir from the CAG II compound near Hoi An.

6 November 1969 - The MCB FOUR Advance Party of 1 Officer and 19 enlisted men departed Camp Adenir, Danang, RVN, to return to the Construction Battalion Center, Port Hueneme, California.

15 November 1969 - Detail INDIA returned by truck convoy from the ROK Marine camp near Hoi An.

25 November 1969 - The well-drilling detail returned by aircraft from Thoung Duc airfield with all equipment.

31 November 1969 - Detail ECHO returned to Camp Adenir, Danang, RVN.

2 December 1969 - The first flight of the MCB FOUR Main Body departed RVN on return to CBC, Port Hueneme, California. The main body movement was complete on 5 December 1969.

14 December 1969 - The MCB FOUR Delayed Party returned to CBC, Port Hueneme, California.

7 January 1969 - Seabee Team 0410 returned to CBC, Port Hueneme, California, from the Republic of Vietnam.

4. Significant Events

26 February 1969 - MCB FOUR was called upon to provide support for the construction of a 40 foot wooden foot bridge at Fillmore, California. Ten BUs and 3 EOs completed the project at 0030 27 February 1969.

27 February 1969 - MCB FOUR was called upon to construct a second foot bridge at Fillmore, California. Recent floods had destroyed the existing bridge structure. Ten BUs completed construction of the 56 foot wooden foot bridge that evening.

3 March 1969 - MCB FOUR held a Battalion Blues inspection and awards ceremony. CAPT R. M. FLUSS, CO NMCB FOUR presented one (1) Vietnam Gallantry Cross with Bronze Star, one (1) Meritorious Unit Commendation, one (1) Good Conduct Award, twenty-four (24) MACV Certificates, one (1) CO NMCB FOUR Letter of Commendation, and two (2) CO NMCB FOUR Letters of Appreciation to Battalion personnel.

8 March 1969 - 31NCR conducted a blues inspection of MCB FOUR as part of the Battalion's Annual Administrative Inspection. MCB FOUR participated in a Regimental Pass in Review and Awards Ceremony held on the CBC Grinder.

MCB FOUR personnel celebrated the 27th anniversary of the Seabees and the 102nd birthday of the Civil Engineer Corps at the Officer's Ball, the Chief Petty Officer's buffet dinner and dance, and the Enlisted Men's dance.

13 March 1969 - MCB FOUR conducted an overnight field exercise at Broome Ranch. This included both offensive and defensive operations.

16 March 1969 - CDR Roy D. GAULDEN, CEC, USN, Prospective CO NMCB FOUR, arrived at the Construction Battalion Center, Port Hueneme, California.

18 March 1969 - Officers and Chief Petty Officers of MCB FOUR held a farewell luncheon at the Colonial House in Oxnard for CAPT R. M. FLUSS, CO NMCB FOUR, LT. S. BILLY, Dental Officer NMCB FOUR, and LTJG COLLINS, X-Ray Company Commander NMCB FOUR.

20 March 1969 - CM3 Kenneth M. SCHWAB was presented the Vietnamese Gallantry Cross by CAPT R. M. FLUSS, CO NMCB FOUR. Petty Officer SCHWAB received the award for his actions during MCB FOUR's 1968 deployment to Vietnam.

MCB FOUR participated in a Regimental Pass-in-Review. The reviewing officer was RADM COMBS, USN, Commander, Service Force, U.S. Pacific Fleet.

21 March 1969 - CAPT R. M. FLUSS, CEC, USN, was relieved as CO NMCB FOUR by CDR R. D. GAULDEN, CEC, USN. The change of command ceremonies were held on the CBC parade grinder, Port Hueneme, California

23 March 1969 - 14 officers and 525 enlisted men of MCB FOUR departed for Camp Pendleton to begin a 12 day training period.

27 March 1969 - The MCB FOUR Advance Party of 5 officers and 95 enlisted men departed Point Mugu, California, on a MAC contract jet for Camp Adenir, Danang, Republic of Vietnam.

31 March 1969 - The BEEP commenced at Camp Adenir, Danang, Republic of Vietnam.

3 April 1969 - MCB FOUR returned from a 12 day training period at Camp Pendleton, California.

14 April 1969 - An awards ceremony was held at Battalion morning quarters. The following MCB FOUR personnel were recognized by CDR R. D. GAULDEN, CO NMCB FOUR: UT2 S. "M" RASH, USN, who received the Navy Achievement w/Combat "V"; EO3 T. W. ADMIRE, USN, who received the Navy Unit Commendation Medal; and ENSIGN J. A. WERNER, CEC, USNR, who had been designated a Distinguished Naval Graduate at the Officer Candidate School.

The BEEP was completed at Camp Adenir, Danang, Republic of Vietnam.

15 April 1969 - CDR R. D. GAULDEN, CO NMCB FOUR, departed the Construction Battalion Center, Port Hueneme, California, for Danang, Republic of Vietnam by way of COMCBPAC Hawaii and Okinawa.

18 April 1969 - At 0345 local time, the first flight of MCB FOUR's Main Body departed Point Mugu, California, for Camp Adenir, Danang, Republic of Vietnam. The C-141 aircraft carried 89 personnel and their gear.

At 0707 local time, the second flight of 89 personnel and their gear departed Point Mugu on a C-141 aircraft.

At 1420 local time, the third flight of 30 personnel with their gear and four cargo pallets departed Point Mugu on a C-141 aircraft.

20 April 1969 - At 1540 local time, the fourth flight of 170 personnel and their gear departed Point Mugu on a MAC contract DC aircraft.

At 1945, Camp Adenir went into Defense Condition I when a 122mm enemy rocket impacted within the Camp Adenir perimeter. Two MCB FOUR personnel were injured by rocket shrapnel. At 2300, Camp Adenir again went into Defense Condition I.

21 April 1969 - At 1200 local time, CDR R. D. GAULDEN, CEC, USN, CO NMCB FOUR, relieved CDR J. J. LEE, CEC, USNR, CO NMCB TWELVE, as Commanding Officer at Camp Adenir, Danang, Republic of Vietnam.

Also on 21 April 1969, CDR Roy D. GAULDEN, CO NMCB FOUR presented the Purple Heart Medal to BU2 P. W. FABRI for wounds received on 20 April 1969, when an enemy rocket impacted within the Camp Adenir perimeter.

22 April 1969 - At 0903 local time, the fifth flight of 88 personnel and their gear departed Point Mugu on a C-141 aircraft.

23 April 1969 - At 0407 local time, the sixth flight of 169 personnel and their gear departed Point Mugu on a MAC contract DC8 aircraft.

At 0700 local time, the seventh flight of 2 men and 9 cargo pallets departed Point Mugu on a C-141 aircraft, completing the move-out from the Construction Battalion Center, Port Hueneme, California.

27 April 1969 - MCB FOUR was called upon to provide a fire-fighting detail to MCB FIVE as a result of the ASP-1 fire and resulting explosions.

30 April 1969 - MCB FOUR was tasked with a portion of the 3RD MP BATT/III MAF Brig area reconstruction. Battalion personnel were immediately dispatched to the area.

CDR R. D. GAULDEN, CO NMCB FOUR presented the Purple Heart Medal to BUCN GONZALAS for wounds received on 20 April 1969 when an enemy rocket impacted near his berthing hut at Camp Adenir, Danang, RVN.

5 May 1969 - Seabee Team 0410 arrived in Vietnam.

12 May 1969 - At 0343, Rocket Condition was set and all personnel went for their bunkers. No rounds landed within the camp perimeter.

14 May 1969 - At 0150, Rocket Condition was set and all personnel went for their bunkers. No rounds landed within the camp perimeter.

16 May 1969 - Rear Admiral DILLON, COM3NCB, came aboard for the MCB FOUR arrival conference.

17 May 1969 - At 0251, Rocket Condition was set and all personnel went for their bunkers. No rounds landed within the camp perimeter.

18 May 1969 - At 0200, Rocket Condition was set and all personnel went for their bunkers. No rounds landed within the camp perimeter.

20 May 1969 - At 0001, 0315, 0400 and 0415, Rocket Condition was set. No rounds landed within the Camp Adenir perimeter.

At 0415, enemy mortars fell on the MCB FOUR detail ECHO, located at Dien Ban, RVN, south of Danang. Three MCB FOUR personnel were wounded and immediately medevaced to NSA Hospital, Danang.

23 May 1969 - Purple Heart Medals were presented to BU3 D. R. BOYLES and BU3 L. L. WEBER for wounds received at Dien Ban on 20 May 1969.

25 May 1969 - The stage show "Has Anyone Seen Kelley" performed at Camp Adenir. All hands enjoyed the entertainment.

28 May 1969 - At 0058, Rocket Condition was set. No rounds landed within the Camp Adenir perimeter.

30 May 1969 - Two MCB FOUR personnel were wounded at the FIFTH Special Forces Camp, East Danang, when a truck accidentally backed over a knapsack which contained an armed mine.

31 May 1969 - The Tokyo Kittens" performed at Camp Adenir, Danang. The show was enjoyed by all hands.

1 June 1969 - At 0419, Rocket Condition was set. No rounds landed within the Camp Adenir perimeter.

At an awards ceremony held in Camp Adenir, CAPT J. E. POWELL, COM3ONCR, presented the following awards to Battalion personnel: two Navy Commendation Medals with Combat "V"; one Navy Commendation Medal; three Navy Achievement Medals with Combat "V"; and one Meritorious Unit Commendation.

MAJOR URBAN, USMC, CB50, reviewed the Ordnance/Communications/Military Readiness areas of NMCB FOUR. LCDR MATTHEWS, CEC, USN, reviewed Embarkation and Contingency Planning.

7 June 1969 - At 0045, 0358, and 0435, Rocket Condition was set. No rounds landed within the Camp Adenir perimeter during any of the four alerts.

10 June 1969 - Rear Admiral DILLON, COM3NCB visited Camp Adenir and was briefed on the Battalion's construction progress and schedules.

11 June 1969 - At 1903, Rocket Condition was set. No rounds landed within the Camp Adenir perimeter.

12 June 1969 - At 0124, Rocket Condition was set. No rounds landed within the Camp Adenir perimeter.

13 June 1969 - At 0246, Rocket Condition was set. No rounds landed within the Camp Adenir perimeter.

15 June 1969 - At 0023, Rocket Condition was set. No rounds landed within the Camp Adenir perimeter.

18 June 1969 - CDR ROY D. GAULDEN, CO NMCB FOUR presented Letters of Commendation/Appreciation to five Battalion personnel and six GED certificates.

20 June 1969 - RADM W. M. HEAMAN, Commander Construction Battalions Pacific, visited the NMCB FOUR project site at Freedom Hill, Danang, RVN.

21 June 1969 - RADM W. M. HEAMAN made a visit to Camp Adenir, Danang, RVN.

22 June 1969 - The "Kings Cross Review" put on a show for the troops. The show was enjoyed by all hands.

23 June 1969 - The USO "Oakly Miller Show" performed in Camp Adenir. This was one of the best shows to play in Vietnam.

26 June 1969 - Rear Admiral DILLON, COM3NCB, Brigadier General YATES, Dep. MACV Director of Construction and CAPT J. W. POWELL, COM3ONCR visited Camp Adenir.

1 July 1969 - Seabee Team 0411 arrived in Thailand to begin their deployment.

3 July 1969 - CAPT MILLER, CBPAC Chief of Staff and CDR HACKENSON, CBPAC Supply Officer arrived at Camp Adenir for the Command and Logistics Management Inspection Visit.

10 July 1969 - Typhoon Condition I was set and all local field crews were pulled back into camp late in the afternoon. The area experienced heavy rains but the severe winds did not develop.

11 July 1969 - At 2210, Rocket Condition was set. No rounds landed within the MCB FOUR perimeter.

12 July 1969 - A show and party were held at the Freedom Hill Recreation Center in Danang for the men who worked on the reconstruction of the Center. MCB FOUR construction crews enjoyed the afternoon activities.

16 July 1969 - Between 0130 and 0330, Detail GOLF site came under mortar and small arms fire. No MCB FOUR personnel were injured.

At 0137 Camp Adenir went into Rocket Condition. Two enemy mortar rounds impacted just outside the perimeter wire at the SE corner of camp. Several other rounds impacted across the road in MAG-16.

18 July 1969 - At 2130, Detail FOXTROT received an incoming enemy mortar round within their perimeter. At 2225, a second round also impacted within the perimeter. No personnel were injured.

19 July 1969 - Detail FOXTROT received three incoming enemy 40mm rounds within their perimeter. No MCB FOUR personnel were injured. Minor damage resulted to surrounding structures.

20 July 1969 - The "EVE and BRIAN Show" performed for the men at Camp Adenir. The entertainment was enjoyed by all hands.

25 July 1969 - CAPT J. E. POWELL, COM3ONCR made a tour of the Camp Adenir MLO operation.

8 August 1969 - CDR ROY D. GAULDEN, CO NMCB FOUR departed Camp Adenir to visit Seabee Team 0410 in Vietnam and Seabee Team 0411 in Thailand.

9 August 1969 - At 1000 a sniping incident occurred against Alfa Company grader operator, EO3 J. J. REARDON and his shotgun rider, CN C. L. TAILFEATHERS. They were working on Route 13C three miles south of Marble Mountain, Danang. EO3 REARDON cut his arm while jumping to the ground. Three bullet holes were found in the grader.

10 August 1969 - "Jaybird Enterprises" put on a show for the troops at Camp Adenir. The performance was enjoyed by all hands.

11 August 1969 - MPC Conversion took place.

12 August 1969 - At 0130 Detail GOLF site came under mortar and sapper attack. UT1 V. J. CLYDE received minor injuries. Two SEA huts constructed by Detail GOLF were destroyed and several others damaged.

At 0325 Camp Adenir went into Rocket Condition. Fifteen enemy 122mm rockets impacted in the MAG-16 area across the road, and five impacted in the NSA Hospital area. No rounds landed within the MCB FOUR perimeter.

At 0613 Camp Adenir went into Rocket Condition again. No rounds impacted within the MCB FOUR perimeter.

CDR W. L. WILSON and LT R. M. ROHRBACK, COMCBPAC representatives, inspected the Operations, Admin-Personnel, and the S-2 functions.

13 August 1969 - At 0404, Camp Adenir went into Rocket Condition. Enemy 122mm rocket rounds impacted on the Danang Air Base and the Bridge Cargo Ramp. No rounds landed within the MCB FOUR perimeter.

RADM J. G. DILLON, COM3NCB and CAPT J. E. POWELL, COM3ONCR visited Camp Adenir for a briefing on the MCB FOUR projects and workload.

15 August 1969 - CDR ROY D. GAULDEN, CO NMCB FOUR returned from his visit of Seabee Teams 0410 and 0411.

17 August 1969 - At 0130 Detail FOXTROT received one enemy B40 rocket round, seven RPG rounds and scattered small arms fire within their perimeter. No MCB FOUR personnel were injured.

19 August 1969 - At 0205 Rocket Condition was set. One enemy 122mm rocket impacted on the ballfield just outside the SE corner of the Camp Adenir perimeter, while another impacted just outside the western perimeter. Ten 122mm rockets impacted in the MAG-16 area across the road. No MCB FOUR personnel were injured.

20 August 1969 - At 0055, five rounds of small arms sniper fire were directed against the security watch at the IRD Building construction site. There were no injuries.

22 August 1969 - At 0134 Rocket Condition was set when ten enemy 122mm rocket rounds impacted on the Danang Air Base. No rounds landed within the MCB FOUR perimeter.

At 2315 Rocket Condition was set again. No rounds impacted within the MCB FOUR perimeter.

23 August 1969 - The "Fred Thompson USO Show" performed for the men at Camp Adenir. The entertainment was enjoyed by all hands.

24 August 1969 - Holiday routine was declared as MCB FOUR reached the midpoint in its deployment. No reveille, steak cook-outs, and free beer and soda at the clubs highlighted a welcome day of relaxation.

27 August 1969 - CAPT J. E. POWELL, COM3ONCR, came aboard Camp Adenir for the MCB FOUR mid-deployment briefing given by CDR ROY D. GAULDEN, CO USN MCB FOUR.

30 August 1969 - At 0930 EO3 J. J. REARDON was shot at by a sniper several times while grading Route 13C approximately 8 miles south of Danang. He was not injured.

31 August 1969 - The troops were entertained by the "Sugar and Spice" Special Services show. The turnout was excellent.

6 September 1969 - At 0151 Rocket Condition was set at Camp Adenir. Ten enemy 82mm mortar rounds impacted within the MCB FOUR perimeter in the vicinity of the MLO and Alpha Company yards. There was some damage to material and equipment, including a direct hit on a transit mixer. No MCB FOUR personnel were injured.

At 0259 Rocket Condition was set again. Three more enemy 82mm mortar rounds impacted within the Camp Adenir perimeter, resulting in minor damage to the MLO warehouse.

At 0326 Rocket Condition was set again at Camp Adenir. The MCB FOUR Concrete Batch Plant near NSA Covered Storage was destroyed by concussion when enemy 122mm rockets touched off a nearby ARVN ASP. There was also heavy damage to structures at III MAF Headquarters and NSA Covered Storage. No rounds impacted within the MCB FOUR perimeter.

11-13 September 1969 - LT H. F. GOHRBAND, SC, USN, AND LT. A. P. MESTERHAZY, SC, USN, COMCBPAC representatives, conducted the Annual Supply Inspection.

12 September 1969 - At 2145, Detail FOXTROT became tactical when the CAG-II compound near Hoi An received several enemy M79 rounds, fragmentation grenades and small arms fire from the surrounding villages. FOXTROT personnel and the Marines returned fire. One Seabee, UT1 A. R. SASSER, received a minor wound as a result of the action.

13 September 1969 - At 2030 Detail FOXTROT became tactical and returned fire again when five rounds of enemy mortar fire impacted within the CAG-II perimeter. No MCB FOUR personnel were injured.

14 September 1969 - The "Donnie James Show" provided the troops with country and western entertainment. The performance was well received.

16 September 1969 - SW1 TAYLOR was presented a Navy Achievement Medal by CDR ROY D. GAULDEN, CO USN MCB FOUR for his outstanding performance during the battalion's past deployment.

19 September 1969 - At 2210 Detail FOXTROT became tactical and returned fire when the CAG-II compound received three enemy 60mm mortar rounds, six fragmentation grenades, and small arms fire. One Seabee, EO3 D. D. SPILSETH, received a minor wound as a result of the action.

23 September 1969 - General H. X. LAM, I Corps Commander, presented Vietnamese Honor Medals to CDR ROY D. GAULDEN, CEC, USN, LT O. B. FORRESTER, CHC, USNR, SW1 W. J. RIGGINS, HM1 T. D. TAYLOR, EA3 R. V. CURRINGTON and SD2 E. T. QUION at I Corps Headquarters.

27 September 1969 - LCDR "J" D. PENSYL, CEC, USN, Executive Officer of USN MCB FOUR departed for a visit of Seabee Team 0410 in Vietnam and Seabee Team 0411 in Thailand.

29 September 1969 - "The Jugheads", a Special Services Show, performed for the troops. The show was enjoyed by all hands.

4 October 1969 - LCDR "J" D. PENSYL, CEC, USN, returned from his visit of Seabee Teams 0410 and 0411.

At 2330 GMG2 P. W. LARREMORE was killed in action about 5 miles southeast of Danang in Binh Ky Hamlet (BT053699).

5 October 1969 - The Special Services show "Somethin" Special" entertained the troops with popular and country and western music. The performance was well received.

7 October 1969 - The Industrial Relations Development Training Facility in Danang, RVN, was dedicated. The IRD Training Facility was constructed by NMCB FOUR.

21 October 1969 - At 0240 Rocket Condition was set at Camp Adenir when ten enemy 82mm mortars impacted at MAG-16, adjacent to Camp Adenir. No rounds fell within the NMCB FOUR perimeter.

A briefing by Commanding Officers of Seabee Battalions attached to the 3ONCR was held for RADM W. M. ENGER, Commander, Naval Facilities Engineering Command, at the 3ONCR. The briefing was attended by CDR ROY D. GAULDEN, CO, USN MCB FOUR.

RADM W. M. ENGER, Commander, Naval Facilities Engineering Command; RADM J. G. DILLON, COM3NCB; and CAPT J. E. POWELL, COM3ONCR visited Camp Adenir for an awards ceremony. A Battalion Formation was held and RADM W. M. ENGER presented a Silver Star Medal to BUI J. B. FEAGINS, nine Navy Commendation Medals and two Purple Heart Medals to other NMCB FOUR personnel.

23 October 1969 - CDR C. A. MERICA, Detailer for CEC Officers, visited Camp Adenir to discuss career opportunities with the officers of NMCB FOUR.

24 October 1969 - Repairs to the Song Cau Lau Bridge were completed by Detail FOXTROT personnel and the bridge was opened to traffic.

5. Major Problems

a. There were no major problems affecting overall unit performance. Problems with specified construction tasks will be discussed in the Construction Operations Summary.

ROY D. GAULDEN

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CO CBCEN PORHUE

CO NAVSCOLCONST

CO NAVSCOL CEC OFF

ALL NMCBs

CO NCEL

DIR OF CONST NORTHERN AREA

DISCIPLINE

	CASES AT MAST	AWARDED NJP	AWARDED COURT MARTIAL
APR	5	4	0
MAY	9	7	2
JUNE	7	6	2
JULY	13	10	1
AUG	15	11	1
SEP	10	3	4
OCT	14	10	4
NOV	12	9	2
TOTALS	85	60	14

MORALE

The 1969 deployment was characterized by outstanding morale from the day the planes delivered the men to Danang until the day the deployment ended. The high spirit of the Seabees depends to a great extent on a significant backlog of work and the availability of the tools, materials, and equipment necessary to get the job done. By making it possible for the men to work hard at their trade and find satisfaction in their efforts, the command won the largest portion of the constant struggle for high morale. All men, and especially Seabees, need a break in the routine or some diversion to keep from getting in a rut. The battalion averaged about two shows per month sponsored by the welfare and recreation fund. Most of the shows were excellent, but even the few that were marginal served their purpose. An active intramural sports program let the men work off steam playing softball, basketball and volleyball. A good selection of movies contributed to the success of the nightly shows at the outdoor theater. The EM Club was, of course, a favorite spot for those who had already seen the movie. On the weekend (Sunday afternoon) the men had an opportunity to go to the beach, or the exchange, or to visit with friends in other camps in Danang. The location at Danang was particularly advantageous since

several well stocked exchanges were available. After FOUR completed the repairs to the Freedom Hill R&R Center, many of the men spent their free time there. Just the short opportunity to soak in the sun on a Sunday afternoon went a long way towards rejuvenating the spirits for another week of work. MARS calls and the R&R program are both irreplaceable as morale boosters. The opportunity to straighten out family problems or just to say "hello, over", helped many men on many occasions. The travel to visit families on R&R or to explore exotic places such as Bangkok, Singapore & Australia broke the long routine of the deployment for many. Opportunities for stand-by R&R trips made it possible for everyone to get away if he had the inclination. The R&R trips boosted the spirits of the family back home which never failed to help the man himself. Individuals, of course, had periods of disillusion and frustration, but there was always someplace to take the problem. The Chaplain did an outstanding job for the battalion. The men generally found answers to their problems, or a diversion to cheer them up.

Hard work, entertainment and concered counseling were extremely important to the outstanding morale maintained throughout the deployment. More important however, is the indomitable spirit of the individual himself. The spirit seemed to be the common denominator for all of the men. If there's work to be done, the Seabees like nothing better than to do it.

MEDICAL

No major medical problems were encountered. The most prevalent cases seen at sick call were upper respiratory infections, gastrointestinal illnesses and dermatologic problems. The Initial Outfitting List did not contain an adequate selection of drugs commonly used in treating these illnesses, such as antihistamines, antispasmodics and fungicidal preparations. Some infectuous agents encountered in Vietnam were resistant to drugs in the battalion's mount-out stock. The Medical Officer was able to easily obtain suitable preparations from Naval Supply Activity or Hospital Facilities. The only lingering problem is the resultant fifteen cases of chronic prostatitis from approximately fifty initial cases of acute gonococcal infections. Urologists in Vietnam have found this a prevalent and difficult problem to treat. They are having success combining gantrisin (one gram four times a day for about six

weeks) with weekly prostatic massages. The obvious superior answer is to prevent initial infections. There were six cases of shigellosis with minimal symptoms. The minor outbreak was controlled by complete fly proofing of all heads and galley spaces, thorough medical inspection of all food handlers and encouragement of personal hygiene. There were very few serious illnesses. There were two cases of encephalitis and one case of hepatitis.

TREATMENT STATISTICS:

Total number of patients treated at sick call: 5,496.

Total number of patients hospitalized: 67.

56 cases of V.D. were treated; 70% of the contacts were in the Danang area.

The MEDCAP program was considered a great success. A total of 7,356 patients were treated. The MEDCAP program is covered in detail in the Civic Action program.

DENTAL

The 1969 deployment turned out to be an extremely active one for the Dental Department. The entire deployment for dental was spent at Camp Adenir. The Dental department occupied one of the new mobile dental trailer units - which at present is being used only by Seabee battalions. Although a great percentage of the men were at detached sites during the majority of the deployment, most of them were able to receive dental care on visits back to the main camp.

The following was accomplished:

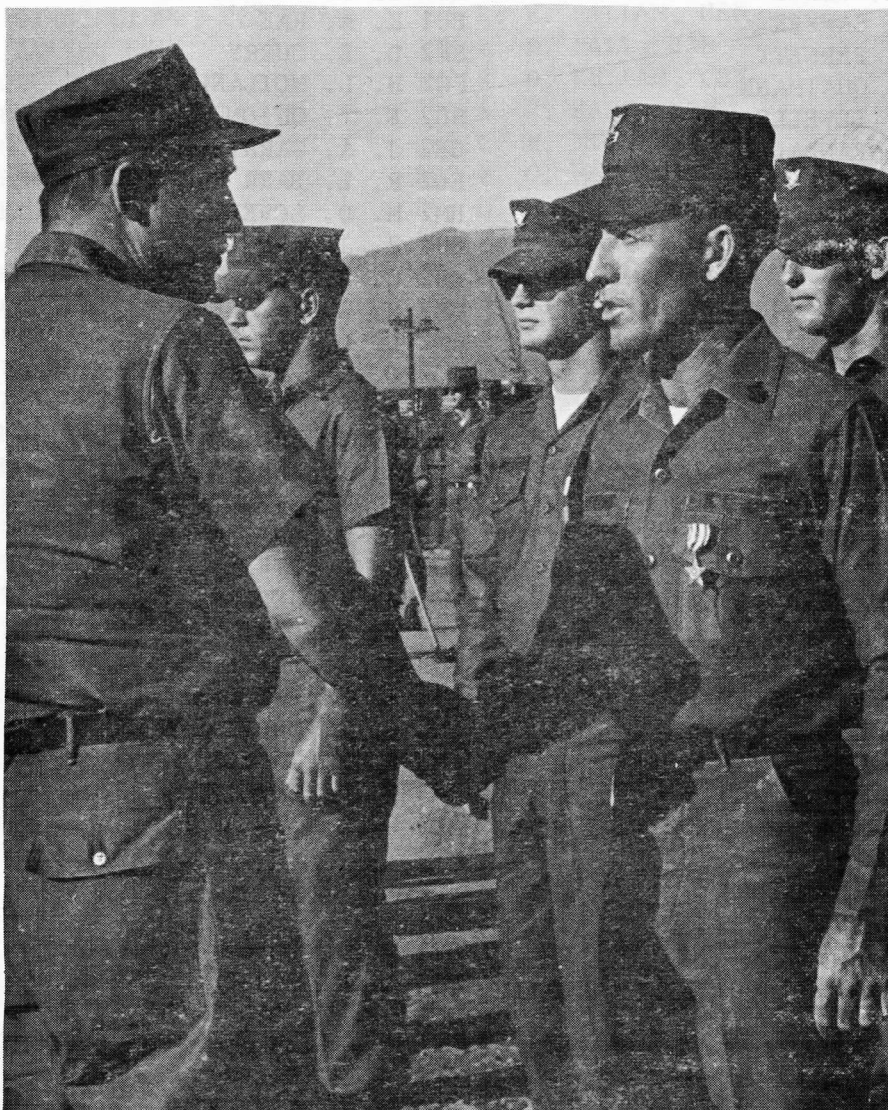
	CLASS AMALGAMS	CLASS II AMALGAMS	PLASTIC REST.	SILICATES
APRIL	14	10	7	5
MAY	122	106	36	3
JUNE	169	167	18	21
JULY	202	219	79	42
AUG	271	234	64	37
SEP	315	210	34	11
OCT	200	155	21	6
NOV	106	121	10	6

AWARDS AND PROMOTIONS

SILVER STAR MEDAL
 BRONZE STAR MEDAL
 NAVY COMMENDATION MEDAL
 NAVY ACHIEVEMENT MEDAL
 PURPLE HEART
 VIETNAMESE CROSS OF GALLANTRY
 WITH GOLD AND SILVER STARS
 VIETNAMESE MEDAL OF HONOR 1ST CLASS
 VIETNAMESE TECHNICAL SERVICE
 HONOR MEDAL
 COMBAT ACTION RIBBON
 EXPERT RIFLE/PISTOL MEDALS

PROMOTIONS

TO	LT	1
	LTJG	3
	E-9	1
	E-8	1
	E-7	3
	E-6	6
	E-5	17
	E-4	50
	E-3	74



RADM W.M. ENGER, CEC, USN, Commander, Naval Facilities Engineering Command, presents the Silver Star Medal to BU1 J.B. FEAGINS

10. NAMES OF PERSONNEL RECEIVING PERSONAL DECORATIONS

SILVER STAR MEDAL

BU1 J. B. FEAGINS

BRONZE STAR MEDAL

CDR ROY D. GAULDEN

LCDR J. D. PENSYL

LCDR J. G. T. MILES

BUCS J. T. BAKER

BUC E. W. PAPKE

NAVY COMMENDATION MEDAL

CDR ROY D. GAULDEN

LCDR J. P. CUSTIS

LT K. C. KELLEY

LTJG. D. R. OLSON

LTJG J. T. SAWYER

LTJG C. D. BERNETT

LTJG J. H. QUATMANN

EACS C. G. LEVELLE

CMCS J. A. RANDALL

EOC L. F. WILLIAMS

CMC W. (n) NEWCOMB

BUC N. A. CLOPP

BUC J. M. LAW

BU1 J. B. FEAGINS

CM1 F. M. BOWERS

EO1 G. L. WALTERS

UT1 V. J. CLYDE

UT1 L. S. DEES

UT2 P. S. ORTEL

UT2 T. M. RHODE

UT2 R. W. CROCKER

CM3 G. L. MARTINSON

BU3 R. L. LUNKENHEIMER

UT3 W. E. SEATON

UT3 J. L. ALLEN

UT3 J. Q. CROSSWHITE

CECA M. A. SILADKE

NAVY ACHIEVEMENT MEDAL

LT J. W. FALKE

LT M. L. DANIELSON

LT. O. B. FORRESTER

LTJG L. L. AYRES

LTJG. J. A. WERNER

ENS G. E. OLSON

CWO J. R. KANGAS

UTCS M. J. MUCHOW

BUC N. A. CLOPP

CEC J. W. HUGHES

BUC E. W. PAPKE

NAVY ACHIEVEMENT MEDAL CONT'D

CEC E. F. ANDERSON

PNC C. S. PALMA

GYSGT W. D. SHAY

CE1 G. G. CARPENTER

UT1 R. E. LYONS

HM1 T. D. TAYLOR

SW1 R. H. TRIMBLE

SK1 J. T. ARMISTEAD

SW1 C. P. BUTLER

BU1 J. W. BYAS

SW1 J. T. TAYLOR

CM1 R. M. BURTON

EO1 L. R. DONAHE

BU1 K. A. RAE

SK2 D. E. CURRY

PC2 H. L. MOILANEN

SD2 E. T. QUION

CE2 J. A. GARRISON

EO2 R. L. BARR

HM2 M. D. LOVELL

BU2 R. J. LYNCH

BU2 C. W. ROBERTS

CM2 R. L. LAMALFA

CM2 D. L. TRUMMERT

EO2 O. C. BRIDGES

EA2 E. P. DUFTON

HM3 R. E. HALLAM

CS3 A. R. KARZ

BU3 P. W. GREBNER

CE3 D. L. HUDGENS

BU3 S. H. PIEHL

HM3 J. W. JONES

BU3 G. X. RUST

BU3 J. J. ZABEL

BU3 R. M. BRENDEN

CM3 G. L. MARTINSON

CM3 S. T. CARRON

CM3 W. R. BAECTEL

BU3 R. L. LUNKENHEIMER

PURPLE HEART

UT1 V. J. CLYDE

UT1 A. R. SASSER

GMG2 P. W. LARREMORE (KILLED IN ACTION)

BU2 P. W. FABBRI

EO3 D. D. SPILSETH

BU3 D. R. BOYLES

PURPLE HEART (CONT'D)

BU3 L. L. WEBER
BUCN U. J. GONZALES
BU3 R. A. DORNFELD

VIETNAMESE TECHNICAL SERVICE HONOR MEDAL

CDR R. D. GAULDEN
LT O. B. FORRESTER
SW1 W. J. RIGGINS
HM1 T. D. TAYLOR
SD2 E. T. QUION
EA3 R. V. CURINGTON

COMBAT ACTION RIBBON

CDR R. D. GAULDEN, CEC, USN
LCDR J. H. T. MILES, CEC, USN
LT K. C. KELLEY, CEC, USN
LTJG A. F. CHRISTY, USNR
ENS G. E. OLSON, CEC, USN
CUCM T. M. CIRINCIONE, USN
BUCS J. T. BAKER, USN
BUC N. A. CLOPP, USN
HMC R. E. HINES, USN
EOC C. I. HUTCHINSON, Jr., USN
BU1 K. A. RAE, USN
EA1 K. M. RITZA, USN
PH1 K. J. JEWELL, USN
EO1 F. G. WALTERS, Jr., USN
CE1 A. F. CASSELS, USN
BU1 J. B. FEAGINS, USN
CM1 R. W. BURTON, USN
BU2 C. R. KLIEVER, Jr., USN
CE2 J. A. MADDEN, USN
CE2 J. R. MICHELS, USN
CE2 J. M. REHOR, USN
CE2 L. R. CASTELL, USN
CM2 J. J. TURK, USN
BU2 F. W. WEGAND, Jr., USN
BU2 T. L. BACELLIA, USN
BU2 M. A. CARTER, USN
BU2 L. S. KARNOWSKI, USN
BU2 J. S. SAUNDERS, USN
BU2 R. J. LYNCH, USN
BU2 B. C. HANSEN, USN
EO2 M. E. OQUIST, USN
EA2 D. F. SMITH, USN
BU3 C. D. DRIPPS, USN
BU3 D. B. BAKER, USN
BU3 D. J. IANNOTTI, Jr., USN
BU3 G. M. HENDERSON, USN
BU3 R. L. JOHNSTON, USN
BU3 R. J. WHITLEY, USN

BU3 N. P. MORENO, USN
BU3 R. C. BENNETT, USN
EA3 S. C. BOYER, USN
EO3 C. W. DAVIS, Jr., USN
EO3 A. F. NOLAN, USN
HM3 R. E. HALLAM, USN
SW3 B. D. HALL, USN
SW3 R. D. KELLAM, USN
CS3 A. R. KARZ, USN
BU3 C. H. MOE, USN
BU3 H. G. MARRIOTT, USN
BU3 M. P. FINK, USN
BU3 F. J. DRACH, USN
BU3 D. A. HUDSON, USN
BU3 J. J. ZABEL, USN
BU3 R. L. LUNKENHEIMER, USN
BU3 G. X. RUST, USN
BU3 D. C. MONNING, USN
BU3 K. R. WOODS, USN
BU3 S. M. JESSUP, USN
BU3 R. M. PELL, USN
BU3 G. C. GLIDDEN, USN
CM3 R. J. THORNTON, USN
CE3 R. M. FORD, USN
CE3 W. D. SCHMIDT, USN
BU3 D. W. MILDBRANT, USN
BU3 R. L. GEBING, USN
BU3 J. M. DOTY, USN
UT3 F. L. GIBBS, USN
CM3 F. R. NIEMIEC, USN
CE3 R. K. LEROY, USN
CE3 D. R. ALMENDINGER, USN
BU3 L. L. WEBER, USN
BU3 R. A. DORNFELD, USN
BU3 H. R. KAWECKI, USN
BU3 R. S. SIMMONS, USN
BU3 I. J. GONZALEZ, Jr., USN
CSSN M. L. SABO, USN
EACN J. R. SATTler, USN

EXPERT RIFLE/PISTOL MEDALS

LTJG L. L. AYRES, CEC, USN
CWO J. R. KANGAS, CEC, USN
GYSGT W. D. SHAY, USMC
CEC E. F. ANDERSON, USN
YN1 J. D. FREUND, USN
EO1 F. G. WALTERS, USN
EO3 J. M. WHITAKER, USN
EO2 L. SWANSON, USN
SWCN O. S. RODRIGUES, USN
UTCN R. E. MELTON, USN
CE2 R. D. BURDICK, USN
EOCN R. J. BLOCK, USN
CA M. A. YOUNG, USN
EO3 E. M. SAENZ, USN
UTCN R. L. CONE, USN
UT2 S. M. RASH, USN
UT3 D. C. HARTLINE, USN
LTJG D. R. OLSON, CEC, USN
BUCN B. C. MILLER, USN
BU3 R. L. DIX, USN
CA D. M. BRICKETT, USN
SW2 G. R. BAKER, USN
SW3 D. K. SWINEY, USN
CA A. M. DANIELS, USN
SW3 R. F. ROTH, USN

VIETNAMESE CROSS OF GALLANTRY WITH GOLD AND SILVER STARS

CDR ROY D. GAULDEN

VIETNAMESE MEDAL OF HONOR 1ST CLASS

LCDR "J" D. PENSYL

3 February 1969

From: Commander, Pacific Missile Range
To: Commanding Officer, U.S. Naval Mobile Construction Battalion
FOUR

Subj: Letter of Appreciation

1. The Ninth Annual Space Fair, sponsored by the Naval commands at Point Mugu and Port Hueneme, was held at the Headquarters, Pacific Missile Range, Point Mugu, California on 9, 10 and 11 November 1968. This event, conducted to further community relations by offering the general public an opportunity to become acquainted with the new developments and accomplishments of the military departments, federal agencies and civilian industry in the Naval Construction Battalion, Aviation, Missile and Space Fields, also serves to generate funds for donation to the Navy Relief Society and other service oriented charities.

2. Our Space Fair was an overwhelming success this year with a record attendance of 232,438 visitors. It not only produced a substantial sum for donation to Navy Relief and other service oriented charities, but earned public understanding and support of the Navy and of the participating services in their space effort and mission in the defense of our nation. Articles that appeared in the press and the numerous written and oral expressions received, described the event as being an educational, enjoyable and memorable occasion.

3. As Chairman of the Ninth Annual Space Fair, I express my sincere appreciation to your battalion for your outstanding contribution in constructing midway booths, installing electrical systems, handling crowd control, providing bus drivers and supplying midway refreshments/concession operators. The performance of your men reflected creditably on this command and the Navy, and you may take justifiable pride in this accomplishment. Well Done.

/s/Marshall W. White
MARSHALL W. WHITE
Rear Admiral, U.S. Navy

OFFICE OF THE COUNTY EXECUTIVE
County Office Building
Ventura, California 93001

ASSISTANCE IN RECENT DISASTER

Today the Ventura County Board of Supervisors gave public recognition to the commendable services given by your personnel in the recent flood disaster. Laudable comments were directed to the total assistance given by individuals and all public or private organizations.

Because of the severity of the storm, there was a great dependency upon radio communications. Exceptional service was given by several stations by informing the public, and by assisting the volunteers and public employees who were performing rescues, evacuating unfortunate persons and making the supreme effort to protect private and public properties.

Personnel and equipment responding to emergency needs were isolated in many instances by mud slides, overflowing water courses, and destroyed bridges. Even under circumstances where major evacuations were being made, the relocations were orderly and with acceptance that there were alternatives to protect lives.

The Board of Supervisors, while wishing to convey this individually to each of you, would appreciate that your respective personnel be informed of this sincere expression of appreciation.

The citizens of Ventura County have ample reasons to respect their neighbors' actions under emergency situations, the abundance of voluntary assistance, and the effective performance of public employees.

Very truly yours,

/s/Loren W. Enoch
LOREN W. ENOCH
County Executive

151008Z APR 69

FM COM THIRD NCB
TO NMCB FOUR

BT

UNCLAS EFTO

NMCB FOUR RVN DEPLOYMENT

AS YOU BEGIN YOUR FOURTH VIETNAM DEPLOYMENT, I EXTEND MY HEARTY WELCOME. I AM CONFIDENT THAT WITH THIS DEPLOYMENT YOUR PERFORMANCE WILL BE MARKED WITH THE PROFESSIONALISM AND "CAN DO" SPIRIT THAT HAS MADE YOUR PAST DEPLOYMENTS SO SUCCESSFUL.

RADM DILLON SENDS

201235H APR 69

FM 3ONCR
TO MCB FOUR/3NCB

BT

UNCLAS

1. YOUR RETURN TO RVN IN SUPPORT OF THE FREE WORLD FORCES IN THE ICTZ IS WELCOMED WITH ANTICIPATION OF A REPEAT PERFORMANCE OF YOUR OUTSTANDING RECORD ESTABLISHED DURING YOUR PREVIOUS DEPLOYMENT. I KNOW THAT YOUR INDEFATIGABLE SPIRIT WILL AGAIN DISPLAY THE TRADITIONAL SEABEE "CAN DO". WELCOME ABOARD.

2. 3ONCR SIX SENDS.

080427Z APR 69

FM COMCBPAC
TO NMCB FOUR

INFO COM THIRD NCB
COM THIRTIETH NCR
COM THIRTY-FIRST NCR

BT

UNCLAS

1. WITH YOUR HOMEPORT LEAVE PERIOD AND TRAINING BEHIND YOU, YOUR BATTALION ONCE AGAIN IS DEPLOYING TO THE WAR ZONE. AS IN THE PAST YOU WILL BE MET BY CHALLENGES AND AN ASSORTMENT OF TASKS. FROM PERSONAL OBSERVATION I KNOW THAT EACH OF YOU WILL MEET THESE OPPORTUNITIES IN THE HIGHEST "CAN DO" TRADITIONS OF THE NAVAL CONSTRUCTION FORCE.

2. BEST WISHES FOR A HIGHLY PRODUCTIVE AND SAFE EMPLOYMENT IN THE DANANG EAST AREA. GODSPEED.

RADM W.M. HEAMAN SENDS

162239Z APR 69

FM COM THIRTY-FIRST NCR
TO NMCB FOUR

BT

UNCLAS

TO THE OFFICERS AND MEN OF NMCB FOUR I TAKE THIS OPPORTUNITY TO COMMEND YOU FOR A VERY SUCCESSFUL HOMEPORT DEPLOYMENT. ON THE OCCASION OF YOUR DEPARTURE TO RVN I AM CONFIDENT THAT YOU WILL CONTINUE TO PERFORM IN THE BEST TRADITIONS OF OUR NAVY AND SEABEES. BEST WISHES.

CAPT R.D. THORSON, CEC, USN SENDS

1ST BN, 2ND MARINE BRIGADE
Republic of Korea, Forces, Vietnam

8 May 1969

Dear Cdr. Gaulden,

I would like to extend my sincere gratitude to all of your officers and men for your excellent construction work in Dien Ban.

In spite of the difficult environment and hot weather, your engineers for several weeks now have spared no effort to construct our facilities, which are excellent. We have noticed the changing appearance of our battalion day by day.

Not only I, but all our officers and men appreciate your outstanding job here. I believe we will have one of the finest facilities in the ROK 2nd Marine Brigade, and it will increase the morale and spirit of the Korean fighting men in Viet-Nam.

Senior Chief Baker has shown excellent leadership and initiative. Several others are doing a fine job, particularly the well driller, dozer operator, and scraper operator.

Simultaneously we are building our own bunkers, and we often bother your engineers, asking for help which is not on your construction program. Still they are gladly helping us.

From 23 April to 5 May we conducted a battalion sized operation in the northwestern part of our TAOR under the support of the USMC, where we captured a number of small arms, crew served weapons, and three 122 mm rocket launchers. Thus we believe we have severely affected the enemy's ability to rocket the Da Nang area, and we appreciate MCB 4's contribution to our operations.

Best wishes to all the officers and men of MCB 4. May it be the best and most decorated construction battalion in Viet-Nam.

Sincerely,

Lee, Do-Haeng
LtCol. ROKMC

222326Z JUN 69

FM COMNAVSUPPACT DANANG
TO NMCB FOUR
NMCB FOUR DET ECHO

BT
UNCLAS

QUANG TRI RUNWAY REPAIRS

DESPITE INCLEMENT WEATHER AND THE REQUIREMENT TO ACCOMPLISH THREE TIMES MORE WORK THAN WAS ORIGINALLY SCHEDULED THE QUANG TRI RUNWAY REPAIRS WERE COMPLETED AHEAD OF SCHEDULE. THIS SIGNIFICANT ACCOMPLISHMENT WAS ACHIEVED THROUGH THE OUTSTANDING PERFORMANCE OF CBMU 301 AND MCB FOUR DET ECHO PERSONNEL. YOUR JOINT EFFORTS AROUND THE CLOCK TO REPAIR THIS IMPORTANT AIRFIELD FACILITY ARE SINCERELY APPRECIATED. WELL DONE.

BT

260828Z MAY 69

FM COM3ONCR
TO NMCB FOUR
NMCB EIGHT
NMCB FIFTY-THREE

BT
UNCLAS EFTO

SEABEE CONSTRUCTION - RECONSTRUCTION FLC FACILITIES

A. CG FORLOGCMD 250546Z MAY 69 (NOTAL)

1. BGEN FEELEY BY REFERENCE A EXPRESSES HIS PERSONAL APPRECIATION TO THE OFFICERS AND MEN OF YOUR COMMANDS FOR THEIR OUTSTANDING EFFORT IN RAPID REBUILDING OF FACILITIES DESTROYED AS RESULT OF THE ASP-ONE FIRE. THE GENERAL FURTHER COMMENTS ON THE USUAL SPLENDID PERFORMANCE WHICH EXCEEDED THE EXPECTED.
2. I ADD MY CONGRATULATIONS TO YOU AND YOUR MEN FOR ANOTHER JOB WELL DONE.
3. CAPT POWELL SENDS.

BT

III MAF

CERTIFICATE OF APPRECIATION

PRESENTED TO

NAVAL MOBILE CONSTRUCTION BATTALION FOUR
COMMANDER R. D. GAULDEN, USN
COMMANDING

For your outstanding contribution to the reconstruction of the Freedom Hill Complex. The destruction of this facility during the ASP-1 fire and explosion was a major loss to the recreation program in I Corps. Through your efforts the reconstruction proceeded at a rapid pace and the complex was reopened in far less time than originally thought possible. The enthusiasm and dedication of purpose which you displayed and the quality of your work reflect great credit upon your professional abilities and are in keeping with the highest traditions of the Naval Service.

20 July 1969

Date

/s/H. Nickerson, Jr.

H. NICKERSON, JR.

Lieutenant General, U.S. Marine
Corps

25 June 1969

AVII-CG

SUBJECT: Letter of Appreciation

Captain Albion W. Walton, Jr.
Commanding Officer
32nd Naval Construction Regiment
APO 96308

1. I would like to express my personal as well as my professional admiration and appreciation to you and the Seabees of the 32nd Naval Construction Regiment for your exemplary contributions to the overall accomplishment of the engineer mission in the XXIV Corps Area of Operations. Your wholehearted, willing support of the XXIV Corps - 1st ARVN Division Team has been truly magnificent.
2. Seabee operations have been marked by professionalism and skill, unbounded initiative and enthusiasm, and remarkable versatility. Though your primary mission was construction of rear bases and lines of communications, your battalions supported all major tactical operations from the A Shau Valley to the Khe Sanh Plateau with equal distinction and zeal.
3. Additionally, the 32nd Naval Construction Regiment has generously and effectively participated in the rebuilding of the two northernmost provinces of Vietnam - so badly scarred by the 1968 enemy Tet Offensive and a devastating typhoon. This activity has been a principal contributor to the unparalleled progress in pacification programs in Northern I Corps.
4. Your sterling accomplishments have been significant factors in the success of Allied operations in the XXIV Corps Area of Operations. You have extended the proud heritage of the Seabees and exemplified their motto, "Can Do". I congratulate you and the 32nd Naval Construction Regiment on a singularly outstanding performance and wish you continued success.

/s/Richard G. Stilwell
RICHARD G. STILWELL
Lieutenant General, USA
Commanding

CF:
Comdr, 3NCB

From: Commander, THIRTY-SECOND Naval Construction Regiment
To: Commanding Officer, U.S. Naval Mobile Construction Battalion
FOUR

Subj: Letter of Appreciation

Encl: (1) CG, XXIV Corps ltr of 25 June 1969

1. The support provided by your battalion to the XXIV Corps is deserving of the highest praise.
2. Enclosure (1) expresses the personal thoughts of LTGEN STILWELL, to which I add my personal "Well Done".

/s/A. W. Walton Jr.
A. W. WALTON JR.

051445H JUL 69

FM: NMCB FIFTY EIGHT
TO: NMCB FOUR

INFO: COM 3ONCR

BT
UNCLAS

PRECAST BEAM FOR SONG TRA BONG BRIDGE

1. BEAM TRANSPORTED FROM CAU LAU TO SONG TRA BONG ARRIVED IN EXCELLENT CONDITION 3 JUL AND WAS PLACED ON BRIDGE 4 JUL.
2. AS PROJECT MAY NOW PROCEED AS PER SCHEDULE, APPRECIATION, THANKS AND A HEARTY WELL DONE ARE OFFERED TO THE OFFICERS AND MEN OF NMCB FOUR WHO SO EXPEDITIOUSLY AIDED IN SOLVING MAJOR PROBLEM. GOOD LUCK TO YOU ON CAU LAU PROJECT.
3. NMCB FIFTY EIGHT ACTING SENDS

BT

061045H JUL 69

FM: COM 3ONCR
TO: NMCB FOUR
NMCB FIFTY EIGHT

INFO: COM 3NCB

BT
UNCLAS

MOVEMENT OF BRIDGE BEAM

1. THE EXPEDITIOUS AND PROFESSIONAL MANNER IN WHICH NMCB FOUR AND NMCB FIFTY EIGHT COMBINED EFFORT IN TRANSPORTING AN ADDITIONAL BRIDGE BEAM FROM CAU LAU BRIDGE TO SONG TRA BONG WAS OUTSTANDING. THE MOST DIFFICULT TASK OF TRANSPORTING AN 81 FOOT, 22 TON BEAM OVER MILES OF EXTREMELY ROUGH ROADS WAS CARRIED OUT FLAWLESSLY. WELL DONE TO BOTH UNITS.

2. COM 3ONCR SENDS.

BT

190952Z JUL 69

FM: CG III MAF DNG
TO: COMNAVSUPPACT
COMNAVFORVREP DNG

COMNAVFORVREP DNG PASS TO NMCB FOUR

BT
UNCLAS EFTO

DANANG RECOVERY OPERATIONS

1. WITH THE DEDICATION OF THE FREEDOM HILL FACILITIES ON 20 JUL 69, RECOVERY OF ALL THE MAJOR FACILITIES OTHER THAN THE ASP ITSELF WILL BE COMPLETED. THUS IN LESS THAN 90 DAYS THE NAVY ENGINEER COMMUNITY HAS REPAIRED AND REPLACED HUNDREDS OF STRUCTURES IN SPITE OF MATERIAL SHORTAGES, AND WORK WAS DONE WITH NO MAJOR DISRUPTION OF PROJECTS THAT WERE ALREADY IN PROGRESS.

2. THE COOPERATION AND PERFORMANCE OF PUBLIC WORKS, THE SEABEES, THE CIVILIAN CONTRACTOR UNDER DIRCON NORTH AND THE BASE DEVELOPMENT OFFICE OF COMNAVFORV REP DNG WAS TRULY SUPERB. I EXPRESS MY APPRECIATION FOR A TREMENDOUS TASK EXCEEDINGLY WELL DONE. LTGEN NICKERSON.

BT

PT063

RTTUZYUW RHMAFA2935 2340056-UUUU-RUMUFGA.

ZNR UUUUU

R 220056Z AUG 69

FM CG III MAF

TO RUMUFGA/NMCB-FOUR

INFO RUMLMPA/COM THREE NCB

RUMLMPA/COM THIRTY NCR

BT

UNCLAS

CONSTRUCTION OF 2D CAG COMPOUND

1. AS THE FINISHING TOUCHES ARE BEING ACCOMPLISHED BY DETAIL FOXTROT OF YOUR BATTALION ON THE 2D CAG COMPOUND AT HOI AN, I WISH TO EXPRESS MY APPRECIATION FOR ANOTHER TASK ACCOMPLISHED IN TYPICAL CB FASHION. THE MEN WORKING ON THE SITE HAVE BUILT A COMPOUND THAT THE CAP MARINES OF 2D CAG CAN BE JUSTLY PROUD OF AND DID SO UNDER THE MOST TRYING CONDITIONS INVOLVING LONG HOURS AND AN EVER PRESENT THREAT OF HOSTILE ATTACK. THESE ADVERSE FACTORS NOTWITHSTANDING, A SPIRIT OF DETERMINATION, SKILL AND GENERAL CAN-DO ATTITUDE WERE ALWAYS OBVIOUS ON MY VISITS DURING THE CONSTRUCTION PHASE. MY CONGRATULATIONS TO ALL HANDS INVOLVED FOR A JOB WELL DONE. LT GEN NICKERSON.

BT

2935

101

MCB-4(A)

220056Z AUG 69

SECOND ENDORSEMENT on Headquarters, U. S. Army Support Command, Danang
ltr AVCA-DNG-SV of 25 Jul 69

From: Commander, THIRTIETH Naval Construction Regiment

To: Commanding Officer, U.S. Naval Mobile Construction Battalion
FOUR

Subj: Letter of Appreciation

1. Forwarded with pleasure.

2. It is always a pleasure to receive letters of this nature. NMCB-4's performance on this project has reflected credit on the United States Navy and the Seabees. Well done.

/s/J. E. POWELL

J. E. POWELL

Copy to:

USASUPCOMD, DANANG

COM3NCB

FIRST ENDORSEMENT on Headquarters, U. S. Army Support Command, DaNang
ltr AVCA-DNG SV of 25 JUL 69

From: Commander, THIRD Naval Construction Brigade
To: Commanding Officer, U.S. Naval Mobile Construction Battalion
FOUR
Via: Commander, THIRTIETH Naval Construction Regiment

Subj: Letter of Appreciation

1. Readdressed and forwarded with pleasure.

/s/J. G. Dillon
J. G. DILLON

Copy to:
USASUPCMD, DANANG

25 JUL 69

SUBJECT: Letter of Appreciation

THRU: Commander
3rd Naval Construction Brigade
FPO 96695

TO: Commander
Naval Mobile Construction Battalion 4
FPO 96601

1. I wish to express my personal appreciation for the construction work accomplished by your unit in the support of units of my command.
2. The "can do" attitude of your men is commendable, and the professional approach taken by each and every man on the job is praiseworthy.
3. In particular, LCDR J. H. T. Miles and CWO J. R. Kangas have, in their overall supervision of the work done, exhibited outstanding characteristics of leadership and technical abilities.
4. Individuals on the job should also be commended for doing outstanding work and for not being satisfied until all was accomplished in a most professional manner. Some of these individuals whom I should personally like to thank are UTCS M. J. Muchow and CEC J. W. Hughes for their efforts on the officers club air conditioning and expansion and the electrical work to the 700 mess area; BU2 C. W. Roberts, BU2 L. S. Karnowski and BU3 Brendin for the work on the officers club expansion; CE2 J. P. Lawson and UT2 R. J. Schaeffer for the installation of the club air conditioning and CE2 M. M. Weeks for his efforts on the electrical work to the 700 area mess.

/s/James W. Gunn
JAMES W. GUNN
Brigadier General, USA
Commanding

PT000038

RITUZYUW RJULMPA1331 2530448-EEEE-RUMUPGA.

ZNY EEEEE

R 100448Z SEP 69

FM COM THIRTIETH NCR

TO RUMRIFGA/NCB FOUR

INFO ZLN/COM THIRD NCB

BT

UNCLAS E F T O

THANH QUIT BRIDGE

1. THE EFFORT BY WHICH THE TACTICALLY VITAL THANH QUIT BRIDGE WAS RESTORED IN JUST THREE WEEKS REFLECTS CREDIT UPON THE ENTIRE BATTALION.
2. CONGRATULATIONS TO YOU AND YOUR MEN FOR ONE MORE JOB WELL DONE.
3. CAPT POWELL SENDS.

100448Z SEP 69

050714Z DEC 69

FM: COM THREE ZERO NCR

TO: NMCB FOUR

INFO: NAVFACENGCOM

COMCBPAC

COMNAVFORV

COM THREE NCB

COM THREE ONE NCR

BT

UNCLAS E F T O//N01650//

DEPLOYMENT COMPLETION

1. WITH THE COMPLETION OF YOUR FOURTH DEPLOYMENT IN THE REPUBLIC OF VIETNAM, I EXTEND MY APPRECIATION FOR YOUR BATTALION'S OUTSTANDING PERFORMANCE. THE EXPERTISE EXHIBITED IN PROVIDING TIMELY AND QUALITY CONSTRUCTION ON SUCH PROJECTS AS THE CAU LAU BRIDGE, CAMP HORN RESTORATION, AIRCRAFT SHELTERS AND MARBLE MOUNTAIN EXPANSION HAS BEEN MOST GRATIFYING AND ATTESTS TO THE CAPABILITIES AND MOTIVATION OF YOUR PERSONNEL.
2. MY THANKS AND CONGRATULATIONS TO THE OFFICERS AND MEN FOR A JOB WELL DONE.

BT

011002Z DEC 69

FM: COM THIRD NCB
TO: NMCB FOUR

INFO: COMNAVFORV
COMNAVFACEGCOM
COMCBPAC
COMCBLANT
COM THREE ZERO NCR
COM THREE ONE NCR
CBC PORHUE

BT
UNCLAS E F T O

TO THE OFFICERS AND MEN OF NMCB-4. AS YOU COMPLETE YOUR 4TH DEPLOYMENT TO THE REPUBLIC OF VIETNAM I EXTEND TO YOU MY CONGRATULATIONS AND SINCERE THANKS FOR YOUR OUTSTANDING PERFORMANCE. THE MANY NEW FACILITIES YOU HAVE CONSTRUCTED IN SUPPORT OF FREE WORLD FORCES, SUCH AS QL-1, 2ND CAG HEADQUARTERS, III MAF BRIG, MAG-16 OPS FACILITIES, THE IRD BUILDING, AND THE CAU LAU BRIDGE, CLEARLY DEMONSTRATE THE HIGH DEGREE OF SKILL AND DEDICATION YOU BROUGHT TO EACH AND EVERY TASK. TO EACH OF YOU I SAY WELL DONE. GODSPEED AS YOU RETURN HOME TO FAMILY AND FRIENDS. RADM DILLON SENDS.

BT

030112Z DEC 69

FM: ADMIN COMCBPAC
TO: NMGB FOUR

INFO: COM THIRD NCB
COM THIRTY-SECOND NCR
COM THIRTY-FIRST NCR

BT
UNCLAS

DEPLOYMENT COMPLETION

1. AS FOUR'S FOURTH VIETNAM DEPLOYMENT COMES TO A CLOSE, IT IS GRATIFYING TO SEE THE TREMENDOUS AMOUNT OF COMBAT SUPPORT CONSTRUCTION THAT HAS BEEN COMPLETED BY THE MEN OF FOUR. THE PAVING OF QL-1 IN QUANG TRI PROVINCE, THE ASP-1 RESTORATION, THE FREEDOM HILL RECREATION COMPLEX, AND THE IRD TRAINING BUILDING WERE JUST A FEW OF THE NUMEROUS CONSTRUCTION PROJECTS YOU ACCOMPLISHED. THE CIVIC ACTION PROGRAMS CONTINUED IN FOUR FASHION - OUTSTANDING.

2. MY PERSONAL 'WELL DONE'. CAPT W. R. ROGERS, COMCBPAC ACTING SENDS.

BT

CONSTRUCTION SUMMARY

The 1969 deployment to DaNang, RVN, was one which called for urgent accomplishment of a wide variety of construction tasks. Roads, bridges, SEA huts and pre-fab metal buildings so typical of recent Seabee assignments were complemented by more diverse work, such as asphalt paving, semi-permanent wooden construction and the new concrete capped aircraft shelters. The customers were as varied as the jobs. U. S. Marines, Army, Air Force and Navy, as well as Korean Marines, Vietnamese Police and local orphanages all benefited from the skills of the men of Four. The backlog was always high; the priorities were always urgent, and the jobs were always completed with a speed and quality which brought complements from the customers.

The "sense of urgency", which was to pervade the entire deployment, got its real start with the ASP One explosion on 27 April. On the day of the disaster, crews assisted the men of MCB FIVE in their firefighting. Two days later, crews moved into the 3RD Military Police Battalion area to begin reconstruction. From the 3RD MP area, crews moved to the Freedom Hill R&R Center to rebuild the Beer Garden, handball court, two warehouses, and the theater. Reconstruction of the ASP itself began the last week of July. Alpha Company scooped up debris and hauled it away while the vertical construction companies rebuilt headwalls, ammo magazines and warehouses. In mid-August, a company sized detachment from MCB 74 was assigned to the ASP work as prime contractor for MCB Four. When MCB 74 relieved MCB Five at Camp Hoover in early October, they assumed complete control of the project. The final surge of reconstruction work began on 6 September when an enemy rocket set off a tremendous secondary explosion at the ARVN ammunition dump in East DaNang. The III MAF Headquarters at Camp Horn sustained blast damage to many structures. MCB Four crews were temporarily pulled off other work and quickly repaired all the damages.

While DaNang crews waged the reconstruction war, detachments from the main body worked in support of Korean and U.S. Marines to the south of DaNang. Detail Foxtrot worked first in Dien Ban, finishing a Korean Marine cantonment started by RMCB-12. Later they built an FSI cantonment and made utility improvements to the Second Artillery Battalion camp. Initial repairs to the Cau Lau Bridge were performed by Foxtrot using Dien Ban as a base camp. From Dien Ban, Detail Foxtrot moved to Hoi An where they transformed the deteriorated remains of

an old French compound into a new home for the Marine Combined Action Group II. The CAG II Compound was then used by Foxtrot as a base camp for work on the Detention Center in Hoi An, the 3RD ROK Marine Battalion Messhall, and the final phases of repairs to the Cau Lau Bridge.

Detail Golf was located on Hill 65 at the outer limits of the southern approaches to DaNang. Detail Golf built SEA huts, a messhall, and utility systems for the Marine Infantry Company and Artillery Battery on the hill.

Detail India, camped inside the 2nd ROK Marine Brigade area, constructed two messhalls and installed a series of reefers in various battalion and company camps in the Korean area. The Alpha Company segment of Detail India repaired the soil cement road which was the Main Supply Route in the 2ND Korean Marine Brigade Compound. Detail India's work in support of the Korean Marines kept them busy from July through November.

Detail Echo was in Quang Tri for the entire deployment. Their efforts in producing and laying asphalt changed the face of Quang Tri province by transforming 23 miles of muddy road into a first class, paved highway. In addition to their own paving operation, Detail Echo drivers delivered asphalt to lay down sites of other battalions that were paving Route 9 from Dong Ha west to Camp Carroll. Aggregate for the asphalt plant was off-loaded by MCB Four at the Dong Ha ramp and hauled south to the plant site at Quang Tri. Detail Echo returned to DaNang only when it was time to board the planes for home.

The "sense of urgency" present in the reconstruction and detachment work was present in all DaNang construction because only the highest priority work ever found its way into the schedules. A new helo pad for III MAF led the list of horizontal work, along with NSA paving, a Helo Hover Pad for MAG 16, and access roads for the Army Support Command. Large site preparation efforts were required for the IRD Building and the MAG 16 Expansion Project. The two semi-permanent wooden buildings of the IRD complex presented a well-balanced construction challenge for all of the trades in the battalion. Other jobs in DaNang called for standard structures which were always erected in less than standard time. The last eight weeks of the deployment saw the full battalion effort concentrated at Marble Mountain Air Facility. An urgently needed expansion required construction of SEA huts, administration buildings, warehouses, messhalls, and BOQs. At the same time, the Aircraft Shelter Program was in full swing. Rates of Steel

erection and concrete placement increased every week. During the second to the last week of the deployment the battalion placed a record 1700 yards of concrete.

The 1969 deployment called for a hectic pace from start to finish. Many problems were encountered and solved while accomplishing a varied, demanding construction mission. The following paragraphs will cover the various phases of that mission in greater detail. Especially noteworthy solutions to problems encountered will be reemphasized in the Lessons Learned section.

3RD MP/III MAF BRIG RESTORATION

The ASP-1 explosion on 27 April 1969 destroyed approximately 80% of the structures in the Marine 3RD Military Police Battalion compound and the III MAF Brig facility. The buildings were mostly SEA huts and wooden rigid frame structures. The SEA huts generally failed due to collapse of the walls or racking of the structure. The damage to larger structures was caused by flying debris and the tearing loose of roofing and siding. Fires then completed the destruction of many areas.

The second day after the explosion, EOD personnel cleared the area of most dangerous ordnance and MCB FOUR moved in to establish a communication and control center on site. Coordination between companies, field changes, material expediting, equipment service calls, and all establishment of relative priorities were handled by the control center. The result of this approach was a smoother job with considerable time savings.

Restoration of the prisoner compound was first priority. Immediate restoration of the maximum security area and the Chieu Hoi area was followed closely by the reconstruction of prisoner berthing huts and messhall. Prisoners were returned to the compound within two weeks of the job start. Work continued then on the berthing and administrative buildings for the 3RD MP Battalion, including repairs to kennels for sentry dogs.

The use of standard buildings and excellent material response was the key to rapid reconstruction. Materials were delivered directly to an on-site MLO area and drawn by the companies as fast as the lumber could be hauled in. Any structure damaged more than 50 percent was demolished and replaced with a new structure from the pre-fab yard on site. This cut the repair-replacement time per structure down to a minimum.

FREEDOM HILL R&R COMPLEX

The explosion of ASP-1 caused major damage to the Freedom Hill R&R complex. MCB-4 received a work order during the last week of May 1969 to commence work on rebuilding the theater, handball courts, beer garden, two beer warehouses and to make repairs to the amphitheater.

Beer warehouses - The two buildings used by III MAF Clubs and Messes for beer and soda storage were 40'X96' stran steel pre-engineered buildings with concrete decks. No stran buildings were available in-country so two butler building kits were substituted. These kits were missing some sheeting, sag rods, and bracing and structural members were bent from bad storage. Substituting Pascoe building sheeting made it necessary to cut each sheet to fit. The bent structural members were straightened using low heat and pressure application. Sag rods and brace rods were replaced by rebar cut to specific lengths and welded into place. The items mentioned caused approximately 1 week of delay in completing the project.

Handball courts - This wooden building was 20' wide X 90' long X 20' high to the ceiling. The design called for 4" X 4" studs on 2' centers with full width trusses on 4' centers. The wall sheeting was salvaged 1/2" plywood outside and 3/4" plywood inside. Each wall was fabricated with sheeting on one side and lifted into place with a mobile crane using an 80' spreader. After the walls were complete the trusses were placed, braced and sheet metal roofing installed. The interior sheeting was nailed into place, filled at the joints and sanded to provide a smooth surface for play.

Beer Gardens - The Beer Garden is open side shed roof surrounding a patio area. The roof trusses had dropped when supporting clip angles broke loose from the columns. Re-construction consisted of jacking up the roof and welding new clips into place. Some truss members had to be replaced as did sheet metal roofing and a wooden fence. A new bar was built since the old bar had suffered dry rot and could not be repaired.

Amphitheater - only minor repairs were required on the amphitheater. The roof on one dressing room had to be replaced. The trusses on the main roof had been sprung, and these were repaired by jacking into place and scabbing. Some seats had to be replaced because of broken planks and rot.

Theater - The theater was a 70' X 144' Pascoe personnel building set on 3' concrete walls. Each end of the building had a wooden addition. The front section contained the lobby, head and office and the rear section housed the dressing rooms. The entire building was considered a total loss.

Salvage operations were extremely dangerous due to twisted metal, the collapsed roof and numerous unexploded shells in the area. Salvage and cleanup was accomplished without incident.

Fortunately a Pascoe personnel building was available from RMK for use as the theater. No problems were encountered in the erection of the framework. The building has two layers of sheeting to allow for insulation material. A shortage of sheeting caused minor delays but enough sheeting was finally located. The additions at each end were basically wood frame construction with plywood wall board. The exterior of each addition was finished using 1" X 6" shiplap siding.

The interior of the theater posed many problems with acoustics and mechanical systems. Suspended acoustical tile was installed in panels approximately 25' square. Getting these panels to hang at the proper height and in proper alignment required many hours of adjusting the hangar wires.

The walls were completed with offset panels which served to break the sound. The acoustic quality of the ceiling and walls combined with the reinstallation of padded seats produced a finished theater with acceptable acoustics.

The air conditioning presented numerous problems. Ductwork had to be remade because it was bent beyond repair. Although the air conditioner units were not damaged, one had been scavenged for parts to keep the other five units operating. We were asked to put this unit back into commission, but after five months the parts had still not arrived.

Stage lights were not available in Vietnam and to date have not arrived for installation.

III MAF HEADQUARTERS RESTORATION

On 6 September 1969 an enemy rocket impacted in the ARVN ammo supply point across the road from the Third Marine Amphibious Force Headquarters, setting off a tremendous explosion. Blast damage at III MAF Headquarters was minor in some areas, consisting mainly of pre-engineered buildings in the path of the shock wave suffered heavy damage in the form of twisted structural members.

The messhall received the greatest damage. Twisted roof beams and columns had to be replaced. This was accomplished by

holding the building at the roof with a crane while structural members were replaced. One end wall had to be repaired because of its torn sheeting. The suspended ceiling in the dining room had dropped when the wire hangers broke or came untied and therefore required replacement.

In the other buildings such as the Officers Club, drop ceiling failures and broken windows comprised most of the damage. Roof panels of corrugated asbestos suffered quite heavily since they are extremely brittle. The Force Maintenance Building, a rigid frame steel structure, sustained damaged end walls and warehouse doors.

It should be noted that adequate quantity/distance factors for explosive storage is the only real answer to preventing recurrences of this type of blast damage. Where blast possibilities still exist, however, it would be best to plan building orientation & design to minimize possible damage.

CANTONMENT FOR THE SECOND COMBINED ACTION GROUP

The work order for this project called for renovation of an existing abandoned French compound near Hoi An consisting of six barracks buildings, one Administration building and four warehouses. All of these buildings were of concrete masonry unit construction with concrete decks. Gross deterioration of the concrete had occurred.

After careful studies were made and correlated with time and cost elements, it was decided we could build better barracks and Admin buildings quicker than the existing structures could be renovated. The existing buildings were removed by dozer and the spoil placed into the berm surrounding the camp.

The barracks and administration buildings were constructed using 20' X 88' wooden rigid frame buildings which turned out to be among the best temporary structures that had been built in Vietnam.

The warehouses were renovated and put into usable condition by pouring a 2" concrete cap on the deck and enclosing the windows with plywood. The doors were built of 2" X 4" frame covered with wiremesh. They were mounted on channels for slide opening.

Support and liaison necessary to maintain a detail 20 miles from base camp created most of the problems on this project. Some required items such as reefers, beds, lockers and galley equipment were unavailable and project gear had to be used for the detachment camp. Since the battalion was working on high priority jobs in the Danang area at the same time, some critical equipment shortages caused delays in getting portions of the job completed on a timely basis.

Extremely rough roads created many problems with support equipment such as generators, welders, and small compressors. Equipment in top working order when it left the shop in Danang was often not working when it had finally bumped its way over the road to Hoi An. To combat this, small equipment was carried down on lowboys which were also badly needed for material deliveries.

Turnover of this project was difficult because of many changes and deletions, and because the men of Detail Foxtrot continued to live within the CAG II compound while they accomplished other projects in the Hoi An area. The customer was prone to depending on the Seabees in camp for repairs and maintenance of the new camp when in fact the job was already complete. It seemed difficult for the customer to avoid asking for one more small job, "as long as you are here".

HOI AN DETENTION CENTER

Detail Foxtrot was tasked in early September to construct a Detention Center at the National Police Headquarters in Hoi An. The center included a galley building with a store room, two 50-man detention barracks, guard living quarters, a psychological operations office, a guard shack, a security fence, and an open well for use by the detainees inside the fenced compound.

Architects drawings were provided by OICC, Saigon. These were revised by MCB-4's Engineering department to simplify material needs and construction methods. Dimensions were converted to feet and inches from the metric dimensions supplied on the OICC drawings. The revised drawings called for the galley and detention barracks to be rigid frame buildings on concrete slabs. The rigid frames were constructed of 2 X 6 members with 1/2" plywood gussetts at the roof ridge and eaves. The barracks were provided with Vietnamese type commodes and two rows of double deck plywood bunks that ran the entire length of the living area.

The guard living quarters and psychological operations buildings were of shed roof construction on stud walls. Because of the limited area available for the compound, these two buildings were put on a common slab with the high points of their shed roofs butted to make a gabled roof. The overhang thus left a 4 foot wide covered breezeway under the roof ridge.

A septic tank and leaching field were constructed for the sanitary facilities installed in each building. Incandescent lighting was provided for all structures. Service drops were from the City of Hoi An primary lines.

Because of the limited area available, careful site preparation was necessary. Field modifications were made to the structures and to the proposed site plan. Excavation in the sandy soil for the well and septic tank was a problem. The hole for the septic tank required shoring until the tank had been poured. The well was constructed using 3 ft diameter concrete pipe. A section was set on the ground and digging began inside the section. As the section of pipe slipped deeper into the sandy soil, additional sections of concrete pipe were added until the well was sufficiently deep. Besides difficulties normally encountered during Monsoon season construction, the only other major problem involved pouring the concrete flush tanks for the Vietnamese heads. They could not be poured monolithically so the wall-deck joint had to be made watertight. To achieve this, a 4" wide galvanized strip was inserted 2" into the edges of the deck slab as the slab was being poured. The remaining 2" protruded into the wall forms. Thus, when the walls were poured, the sheetmetal served as a waterstop at the cold joint.

3RD BATT 2ND ROK MC BRIGADE GALLEY SHOWER & WATER TANK

One of Detail Foxtrot's projects called for the construction of a 20 head shower, a 250 man galley, and a 100 bbl water tank and distribution system for the 3rd Battalion, 2nd ROK MC Brigade near Hoi An.

The structures were ABFC types. Since the crews had previously built the same type shower and galley, the only problem they encountered was in the erection of the prefabricated 40' trusses without the aid of a crane. This was accomplished by prefabbing the trusses in 2 - 20' sections and nailing them together at the center gussetts after the sections had been lifted into place over the center wall.

Construction of a standard class 60, one-lane, timber bridge commenced first to get the vital roadway open and to provide a working platform for permanent repairs to the bridge. Traffic continued to use the temporary west lane while MCB FOUR crews replaced the three damaged piles and the entire pile cap.

Fortunately, replacement beams were readily available. They had been staged at the north end of the bridge in the area which had been the casting yard for the original construction. These beams weighed over 22 tons apiece and because of their length it was necessary to utilize one 25 ton mobile crane at each end to lift them. The beams were moved out to the middle of the bridge by a 5 ton tractor truck rigged with a pole cradle on the fifth wheel and a pole trailer secured under the far end of the beam. In the first phase of the beam placement, the five beams forming the east lane of each span were placed, grouted, and post-tensioned perpendicular to the roadway using 7/16" diameter high tension cable stressed to 17,000 PSI. The east lane of the bridges was then opened to traffic and the temporary timber bridge was dismantled to permit placement of new beams for the west lane. Grouting and tensioning of the west lane to tie in with the east lane completed the structural repairs to the bridge. Sidewalks and handrails were poured in place and the roadway was paved with a 1 1/2" asphalt wearing surface.

Problems:

1. Handling the replacement beams with two cranes was a tense operation with little margin for error. Detailed planning and close coordination kept the movements required down to a minimum.
2. Several cable anchors were stripped while tensioning the cables. This was prevented by setting the anchors securely by hand before tensioning.
3. Endless convoys made the temporary wooden bridge a hazardous work platform. The bridge was secured to traffic for each beam placement sequence and a great deal of time was lost waiting for traffic to clear even the briefest closures.

THOUNG DUC

MCB FOUR was called upon to send a small detail of men to a Special Forces camp at Thong Duc to repair a dirt airstrip. The road to Thong Duc was neither passable nor secure, so all equipment was flown to the site by CH-54 helicopters. The Sky

Crane easily handled the battalion's airlift equipment on the 25 mile trip to the site. A front end loader, two 2 1/2 ton dumps, a TD-6 dozer, and a mini-grader were used on the job. Ruts and mortar holes were filled with laterite from a borrow pit and the entire surface was sprayed with RC-800 asphalt. Construction of new concrete markers and installation of a wind sock completed the work.

Late in the deployment, the Battalion was tasked to drill a well within the Thoung Duc camp. A DAVEY well rig was disassembled and airlifted to the site. After reassembling the rig, the crew worked for several weeks in the face of hard rock, equipment breakdowns, and logistics problems. At a depth of 190 ft the drill steel broke and stuck in the hole. All attempts to recover the steel and save the hole were in vain. Finally, the hole had to be abandoned and the rig returned to Danang.

DETAIL ECHO - QUANG TRI

From 13 April 1969 to 25 November 1969, Detail Echo of MCB FOUR operated a Barber Green, 150 to 200 ton per hour, continuous mix asphalt plant at Quang Tri. In addition, from 13 April to 25 October, the detail operated the Dong Ha rock off-load facility 24 hours per day and seven days per week. From 9 June to 30 September, Detail Echo also operated its own paving machine.

The asphalt schedule given to Detail Echo by 32 NCR was often subject to change due to the unpredictable conditions which presented themselves. First, Detail Echo supplied asphalt to MCB 53's laydown crew on Route 9 west of Dong Ha. Since the paver assigned to Detail Echo was the only one available with the required extensions, and route nine was ready for paving while QL-1 was not, the paver was used by MCB-53's laydown crew. Because the haul distance ranged up to 20 miles from Quang Tri to Camp Carol on Route 9, it was difficult to maintain a sufficient number of trucks to keep the plant operating a full day. Some days, as many as 50 dump trucks operated out of the plant, each making only two round trips.

Once the paving was complete on the 13 mile first increment of Route 9 and paving machine extensions were received by other battalions, MCB FOUR began a laydown operation on QL-1. Asphalt was sent to both laydown crews until MCB 53 had completed the installation of its plant at Vinh

Dai. After paving the Quang Tri airfield and the Dong Ha Convoy route, MCB 4 paved primarily south of Quang Tri on the Hai Lang bypass and QL-1. The paving to the south of Quang Tri involved at most a 14 mile haul distance and presented less of a cycle problem. Nevertheless, because of traffic delays and a one way bridge, it was necessary to use trucks from other commands in the area to keep the batch plant in operation.

Detail Echo was required to operate six days a week with the seventh day as a maintenance day. The required output each week varied from 3600 tons to 4200 tons. Significant breakdowns at times caused Detail Echo to fall behind, but overall, the construction schedule was met. When the rains became a problem and slowed base preparation, the plant was able to keep up, although a few times it demanded that the plant operate at 210 tons/hour during the limited good weather.

Quality Control is a definite must in any asphalt production operation. Detail Echo had a quality control laboratory run by three engineering ands. Ideally, weeks before any asphalt is produced, the quality control people should be busy designing an asphalt mix. First, aggregate should be blended until a gradation within specifications is obtained. Once the gradation is obtained, marshal samples should be made at several different asphalt contents, thereby determining a curve of each specification parameter versus asphalt content. From this family of curves, the optimum asphalt content meeting each of the required specifications can be determined. If no asphalt content gives results which meet all specifications, the gradation must be altered and a new family of curves must be determined. Several problems presented themselves to Detail Echo in quality control. For the first few weeks, Detail Echo had problems with the quality of their asphalt mix. This was mainly because specifications and proper testing equipment were not received until the plant had been operating for three weeks. The plant was operated even without proper quality control to provide asphalt for Route 9, then being paved to reduce the number of mining incidents, which previously had ranged up to 40 per day. Once the proper equipment and specifications were received, a mix was designed, and daily quality control tests were made.

Another problem encountered was with the asphalt aggregates. 3/8" minus and 3/4" minus aggregates were barged from the Danang black rock bay quarry to the Dong Ha ramp and hauled by truck to Quang Tri. There were great variations in the gradations of these aggregates which produced a subsequently varied

mix and mix performance. Also, there was much contamination in the plant stockpile because no dividing walls were built in the aggregate bin. The bin walls were constructed while the plant was operating, and once completed, Detail Echo began using a three part aggregate mix. In addition to the 3/8" minus and 3/4" minus, a local river sand was used. More consistent mix results were attained once the bin walls were completed.

Still another quality control problem was the tendency of the asphalt content to vary from day to day. This resulted from lines becoming clogged with debris which then got into the melters. It required constant effort to keep debris out of the melters and to clean the two filters and spray nozzles. Consistent asphalt content was realized when this maintenance was performed.

Few problems presented themselves in the laydown phase once operator education had been conducted and adjustments made to the finisher. However, loading and unloading the paver each day did prove to be a problem. Because of enemy activity, the paver had to be taken into a secure area each evening. After experimenting with an airlift tilt top trailer and lowboys with several types of ramps, a workable safe method of loading and unloading was devised. It consisted of a set of ramps pinned at their midpoint to the rear of a lowboy up which the paver could crawl. This method allowed two pavers to be transported at once and the unload-time was reduced to 3 minutes.

The rock off load facility at Dong Ha was required to operate 24 hours per day, seven days a week. Barges were unloaded with two P & H 640B cranes with 1 1/2 yard clam shell buckets. The aggregate was then loaded into trucks which carried it to Quang Tri. Significant downtime to both cranes resulting from hydraulic system failure was the major problem encountered at Dong Ha. Cleaning the barges of all aggregate presented another problem. A dozer could only be used to clean the barges at high tide. At low tide, the barges were 15 to 20 feet away from the ramp and no safe way could be devised to clean up the 20 to 30 tons remaining on the barge which could not be picked up with the clam shell. In early September when sufficient aggregate was stockpiled at Quang Tri, the ramp operation was turned over to MCB 74.

The maintenance of equipment proved to be one of the most important concerns of the Quang Tri asphalt production. Over twenty USN numbered pieces of equipment had to run in order to produce asphalt. Of these pieces, only two were backed up with

spares. The lack of back up equipment resulted in significant down time. Another major maintenance problem was the lack of spare parts for the asphalt plant, paver and other augment equipment. Hundreds of hours were lost in the production and lay down operation because replacement parts were unavailable. Equipment had to be temporarily pasted back together and coaxed to work so that the asphalt operation could continue. Expecting an operation as complex and critical as asphalt production to function at near optimum, without back up parts, is not realistic. Priority 02 part requisitions commonly took up to four months to fill. The fact that the operation functioned as well as it did is a credit to the ingenuity of the maintenance men of Detail Echo.

MCB FOUR's haul capability consisted of ten 5 ton dumps and 14 - 15 ton International dumps with 5 CY beds. The tactical dumps operated well throughout the paving season. The International would be a good asphalt truck if it were used to haul only over paved roads. In Detail Echo's situation, it was often unavoidable to use them on unimproved roads. The suspension, cab mounts, and engine mounts just did not stand up. The International trucks were a constant headache although they were improved by modified cab and engine mounts. This, coupled with the lack of spare parts, made the 15 ton dump trucks a poor investment for Detail Echo's operation.

With the accomplishment of the work schedule and the turnover of the plant to MCB 74. the men of Detail Echo could feel justifiably proud to have completed a project valuable to both the Armed Forces and to the civilian population of the Republic of Vietnam.

	TOTAL TONS	TON MILES
APRIL		
ASPHALT MIX	6466	90372
CBR	1046	15650
MAY		
ASPHALT MIX	10767	116415
CBR	1196	17904
AP 3	414	6356
3/4" ROCK	1360	10533
3/8" ROCK	7160	50808
RC 800	110	879
SAND Q.T.	4026	23521
LATERITE	1469	10283

JOINT MEDICAL REGULATION BUNKER

MCB FOUR received a job order to design and build a bunker to house the Joint Medical Regulation Team at the 95th Medevac Hospital in Danang East. A standard TSFC timber bunker protected by Ammi revetments was chosen as the design solution. Constructing the concrete slab on grade and the standard timber bunker presented no unusual problems. However, problems were encountered with the Ammi revetment, some of which were inherent in the structure of the revetment itself while others were due to our own design. It was thought that a savings in time and material would result if only the wall of the revetment was assembled and the timber bunker was used for the inner wall. The steel rods which normally tie the two metal walls of the revetment together were bolted into the 4" X 10" timber wall planking. When the revetment was filled with sand, the sand exerted pressure over the entire outer wall, which acted as one member to accept the distributed load. The inner, planked timber wall accepted the distributed load also, but concentrated loads in the opposite direction at the points where the steel tie rods were bolted to the bunker pulled the 4" X 10" planking away from the 12" X 12" uprights. To stabilize the bunker, clip angles were used to bolt the wall planking to the uprights. The problem would not have been so pronounced if the metal revetment wall had more structural stability. The stability problem was also demonstrated during the filling operation. Slight bumps by the forklift crippled the thin vertical channels with subsequent complete loss of strength in the affected panels.

INDUSTRIAL RELATIONS DEVELOPMENT TRAINING FACILITY

The IRD Training Facility was a complex consisting of two buildings designed to provide classroom space for training Vietnamese civilians in clerical and vocational skills. The complex included an asphalt roadway, vehicle parking areas, a water tower and tank, an emergency generator, a septic tank sewage system, a security fence, and drainage structures. Building "A" was 40' X 60' and contained a total of 15 rooms on its two floors. The "B" building was 40' X 100' and contained 21 rooms on two floors.

Both buildings were of wood frame construction with plywood interior partitions and drop siding on the exterior. The job required much more finish carpentry than projects to which Seabees in Vietnam have become accustomed. Tile, trim, and finish doors throughout the building required careful attention

to detail. To prepare the site, it was necessary to haul more than 5,000 cy of fill to raise the pad 4 ft out of a swamp. The compacted fill was then capped with CBR compacted to provide the required base stability. The parking lots were then paved with 2" of asphaltic concrete.

Theft was a major problem at the IRD site. Since it was not in a protected compound, it was necessary to post a two man guard after working hours. Another problem was caused by the non-modular construction which made it necessary to cut plywood for interior partitions. Also, the 40' long roof trusses specified had to be redesigned to span the large classroom areas without excessive deflection.

INFILTRATION GALLERY

The prime difficulty in the installation of an infiltration gallery for the Army Support Command was excavating below the water table. An initial attempt to dig the hole without first installing a sheet pile cofferdam was completely futile. After the cofferdam was installed, a 600 GPM pump borrowed from the contractor was adequate to keep the hole dry enough to be workable. Precast concrete casing sections 4' square were stacked over the collection basin. The basin was fed by two 6" well screens laid horizontally 1 ft below the water table. The well screens were laid in a bed of coarse sand which acted as a filter for water seeping into the screen. A 10' X 10' wood frame building was constructed to house the pump and chlorinator. Approximately 300 ft of 2" galvanized pipe was placed to connect the pumphouse with an existing water tank.

BRIDGES

Besides the reinforced concrete Cau Lau bridge, MCB FOUR was also tasked to repair four timber bridges damaged by enemy action.

The Cooper bridge on route 12E was blown on 15 April, just before the arrival of the main body in Danang. A bridge crew was quickly moved up to the first flight and work began as soon as the crew stepped off the plane. One damaged pile bent was replaced and the two spans supported by it were replaced. Repairs were made with standard components to Class 60 specifications. Later in the deployment a 64 ton tank put this bridge out again by sinking three piles of a bent near the center of the stream. The bent was repaired by welding

an additional section to the fluted metal piles and driving them further down to refusal. The wood pile cap and most of the old stringers and decking were reused to complete the repairs.

The Thanh Quit bridge on QL-1 south of Danang was blown on 16 August. While Marine Engineers built a pontoon bypass, the Seabees began the reconstruction of the four damaged spans. Steel stringers necessary to duplicate the original construction were not available so a standard timber bridge was used. Some modifications to standard designs were necessary to utilize existing pile caps and match the deck level of the structure. This required some cutting of timbers, but the bridge was still completed in 10 days. Perhaps the greatest problems with the Thanh Quit bridge were support problems suffered by MCB FOUR crews located south of the bridge. The one lane pontoon bridge had convoy traffic stacked up at both ends causing long delays.

Two smaller bridges south of Danang were blown early in the deployment and not repaired for many months because a temporary bypass was adequate to keep traffic moving. This job was finally assigned to MCB FOUR late in the deployment when monsoon rains put the bypasses under three to four feet of water. Existing abutments were repaired with timber piles. Precast concrete bridge beams which had been staged at Camp Haskins were used for the decking. Wooden sidewalks and handrails were added to each of these bridges. The problem of supporting the walks was solved by bolting timber supports to the underside of the bridge. The fact that the existing abutments were neither parallel to each other nor were they properly aligned with the centerline of the road made it impossible to place the beams exactly side by side as designed. A slight staggering of the ends was necessary and where the abutment centerlines did not match the road centerlines the finished bridge was unavoidably at a slight angle to the road centerline. Both of the small bridges were repaired within three weeks.

HARDSTANDS

Hardstand construction in the East Danang area was essential to provide any support for vehicles and storage areas. A common, inexpensive method of construction was to cap the sand with 8 to 12 inches of laterite from borrow pits at Monkey Mountain. This method worked fairly well in dry weather, but monsoon rains turned any exposed laterite to slush. Soil cement applications to the fine sand had been used previously

with good results, but the expense, the drain on manpower, and the lack of proper equipment made soil cementing undesirable. The solution which worked best was to compact the sand and add compacted crushed base rock to obtain the required base density.

The 200' X 300' III MAF helopad was the first hardstand MCB FOUR constructed using this technique. Providing the tremendous volumes of water necessary to obtain optimum moisture for the compaction of sand fills of up to four feet presented a serious problem at first. Fortunately, enough excess pipe was available to permit installation of a 300 GPM pump which lifted water to the site from the adjacent Danang river. Additional river water was provided by an NSA Fire Department Pumper Truck. A day and night pumping operation and continuous rolling with a towed vibratory roller produced the required compaction in a short time. After adding 8" of compacted CBR, the helopad was paved with 2" of asphaltic concrete. Shoulder areas were of compacted CBR which was shot with liquid asphalt for erosion control. Side slopes on the fill were capped with laterite and sprayed with asphalt to prevent erosion.

A 200' square helo hover pad was constructed at Marble Mountain Air Facility using this technique. Here a 5,000 gallon water trailer was available to haul the required water. In this case, sand fill was again used because it was available close to the project site.

Laterite, which would have also provided base suitable for paving, would have had to be hauled from Monkey Mountain, a considerable distance away.

DANANG EAST DRAINAGE

Drainage at Marble Mountain Air Facility has been a continuous problem. The ditch between the west perimeter road and the perimeter fence has always flooded during rainy weather because the water had no outlet to the sea. MCB FOUR was tasked with a solution to this problem. Original design restrictions, which allowed a minimum slope of 0.5 percent and no flooding of the ditch at high tide, were not compatible. The final solution was to accept the flat slope necessary to comply with the elevations of existing culverts. Two 36" diameter culverts were installed under the west perimeter road, near the end of the crosswind runway, allowing the water in the ditch to escape to the ocean. Flooding conditions were immediately relieved.

The silting sand makes regular maintenance of the ditch a necessity, but as long as the channel is kept clear, flooding of the west perimeter road is unlikely.

OFFICERS QUARTERS - U.S. ARMY SUPPORT COMMAND

Two motel type BOQ buildings were constructed for the Army Support Command in Danang East. The buildings were two story, wood frame construction with complete head and shower facilities on each deck. Private rooms were entered from exterior sidewalks and balconies. Water pressure in the area was inadequate to serve the second floor showers so a steel water tank was built and installed on a timber tower to provide the necessary head. Installing a septic tank proved difficult because of the high water table in the East Danang area.

The finished buildings were very attractive with their louvered siding and cantilevered balconies but it is doubtful whether they will provide comfortable living space. The rooms are extremely small, and the floor plan does not allow for any cross ventilation. The floor space per officer in this standard design was only 75 percent of that authorized by MACV design criteria.

CONCRETE BATCH PLANT

Control of the original plant, located at NSA Covered Storage, was first assumed by MCB-4 upon arrival in Vietnam. It was a makeshift plant with no scales or water metering device to measure concrete batches. A high earthen ramp was constructed for a fork lift to carry cement to the hopper from a warehouse located adjacent to the plant. Indigenous laborers broke bags of cement into the hopper where they emptied into transit mixers. They also counted bags so the required amounts of sand and gravel could be estimated for each TM. Estimated quantities of sand and gravel were loaded into the hopper by a clam-shell bucket. The water was timed for the quantity and at times this method proved very inaccurate. After a period of trial and error batching, the plant crew achieved a mean plane of quality that proved to be adequate for all normal concrete pours.

Batching was done for all of the Danang East Area including NSA, who used their own trucks and drivers. MCB-4 maintained a minimum of 6 TMs and drivers. The first five months showed a production average of 400 CYs per week. Besides local pours many were at areas such as Hill 65, Freedom Bridge,

Dien Ban, Hoi An and the Cau Lau Bridge, each at minimum round trip distance of 35 miles. The long hauls caused much down time for repairs.

During the early morning hours of the 6th of September 1969, an explosion at the ARVN ammo dump near the batch plant totally destroyed the plant and did extensive damage to the surrounding area. The plant was considered a total loss, the crane suffered light damage, and the office was flattened. No personnel were at the plant at the time of the explosion.

Fortunately, work was nearly completed on the establishment of a new Ross porta plant located at Marble Mountain Air Facility. This new plant was capable of producing 100 cy of concrete per hour in accurate batches.

The plant was installed to support the construction of 32 concrete covered aircraft shelters at MAG-16, each requiring 470 cy of concrete. The new location required the excavation of a sump to supply water, erection of two pontoons for water storage, installation of a 100 KW generator to supply electricity, and a conveyor with platform to load cement into the plant. An office was constructed to handle administrative functions. The plant was producing concrete for all those mentioned previously within a week of the explosion.

The new plant was set up with the capability to utilize either bag cement or the new "blivett" (rubber bladder cement containers) system. The blivetts were preferred over bags because they eliminated trash, spillage, and hydration problems. The blivetts were lifted over the hopper of a belt conveyor by a silent hoist. A supporting frame for the blivetts with a vibrator attached was fabricated by the Bravo Company shops. Even with this vibrator it still took 12 minutes to empty a blivett. The emptying time was the slow point in the concrete production cycle, and studies were still continuing in an effort to speed up the operation when MCB FOUR returned to Port Hueneme.

Sand for the plant was obtained from the sand pit just north of Camp Adenir. Aggregate was hauled from the Black Rock Quarry at Monkey Mountain. The high water table in East Danang made it simple to dig a sump using only a dozer. Installation of a pump in the shallow hole provided excellent water for concrete batching.

The Ross Porta Plant was found to be a reliable piece of equipment. It easily produces its capacity as long as the hoppers are kept full. Labor required on the plant is minimal, especially when blivetts are used. The concrete produced was of consistent high quality. A vigorous preventive maintenance program was, of course, essential to proper functioning of the plant. Keeping a mechanic on site to handle the plant, the crane, the generator, and the silent hoist is a good manpower investment.

Operational control of the plant was maintained by the Operations Department with equipment support provided by Alpha Company. While this arrangement had the advantages of closer control and scheduling, it was also, at times, a source of dual supervision, split responsibility, and minor conflict. It is felt that the plant operation should remain a line company function with scheduling and testing services provided by the Operations Department.

QL-1 SOUTH

Late in the deployment, MCB FOUR was tasked to prepare the sub-base for 6.3 miles of QL-1 between Danang and the Cau Lau Bridge. The Marine Engineers had been working this section of the road for several months. Our original tasking called for paving the base prepared by the Marines. The Marines were to provide the haul capability. Even when MCB FOUR was committed to the base work, the Marines were still to do all rock hauling.

The road, as it was received from the 7th Engineers, USMC, consisted of the original Vietnamese road widened on one or both sides with shot rock, overlaid with 6-inch surge pile rock in depths of 1 to 6 feet. The full width of the road was capped with 8 to 12 inches of crushed base rock (CBR) placed in a single lift in most places. The original Vietnamese road was silty sand or laterite subgrade, with a 4 to 6 inch hand-placed, macadam surface. The surface was broken and was supposed to have been lightly scarified before the crushed base course rock was placed. However, some sections of the original road had not been scarified. Great disparity existed between the widened and the old Vietnamese road sections in the type of sub-base and base materials, in the compaction of the two types of sections, and in the depths of the sub-base course materials. Some of the effects of these differences could have been reduced by extensive compaction of the widened sections, but proper composition equipment and

adequate water was not available to the Marines during the construction. Before any work was done, the existing road was proof rolled at a very high moisture content with a 30 ton pneumatic roller close coupled with a heavy, vibratory, steel wheel roller. The soft spots found by the proof rolling, indicating inadequate compaction, and excessive deviations in the surface, were corrected by adding crushed base rock material, reshaping, and recompacting with the proof rolling equipment to the required density. The road was widened further by adding 6 inch surge to both sides giving a total road width of 40 feet. This material was hauled by 7th Engineers, dumped on the road, and then bladed over the edge by a dozer with an angle blade until the shoulders were at the proper height and width. There was no attempt to compact this small width of new shoulder.

The new, 12 inch base course was put down in three layers of 4 inches each to insure proper compaction. Generally, the crushed base rock available in Danang had excessive fines, but on this project the CBR contained few fines and much 3 inch rock. When lack of fines was a problem, a grid roller was used to break up this larger rock and obtain our own well graded base rock. A self-propelled grid roller was also used to crush the rock and to give compaction. The grid roller was followed by the rubber tired roller and the vibratory in order to insure compaction in depth. Since the vibratory compactor was new, reports on its effectiveness and durability were required by 31NCR. The roller did an outstanding job. It compacted deeply and worked very fast. By using this sequence and combination of rollers, excellent compaction was obtained. Besides the three rollers for compaction, other project equipment included three graders, one dozer, one water distributor and as many trucks as 7th Engineers and MCB 4 could muster, usually about twenty.

The base course was originally ment to put the road in a condition good enough that traffic could move smoothly and quickly during the monsoon season. The decision to proceed with paving had been withheld for a time pending analysis of extensive pavement failures which had occurred in the Danang area. Therefore, a high crown was placed in the road at all sections to insure drainage. However, the compacted sub-base turned out so well that the decision was made to proceed with paving. MCB 4 was tasked to pave the section of QL-1 from the end of pavement south of Danang to the Thanh Quit Bridge, a distance of 4200 feet. Rain, which continually hampered the whole job, delayed the paving operation again during the

last week of the deployment. Still, more than 3,000 ft of road were paved before the job was turned over to NMCB 121. Coordinating between the three separate commands tasked with providing haul capability proved to be the major problem on this project. Radio contact had to be maintained continuously between MCB 4, the 7th Engineers, and MCB-1 who provided trucks for a week. Minor problems were continuously dealt with and resolved over the radio. The long distance between each of the camps with no effective land line connection reduced personal contact and clear communication between the units to a minimum. A high spirit of cooperation between the units involved filled the communications gap and the job proceeded very smoothly.

MAG 16 EXPANSION

Just eight weeks before the end of the deployment, MCB FOUR was tasked with an expansion project at Marble Mountain Air Facility. The increased facilities were to handle a new squadron being moved down from Quang Tri. Berthing, messing, and administrative facilities were needed on a crash basis. Work began immediately with design, scheduling, and construction being accomplished simultaneously. Standard TSFC structures were throughout most of the project which is described in the following paragraphs.

Troop Housing - 60 SEA huts, 2 - 20 head showers, 1 - 9 head shower, and 10 burn-out heads were built for enlisted berthing. Half of the site specified was flooded with 2 to 3 feet of water, requiring round-the-clock fill operation by Alpha Company. Delta Company prefabbed the structures and erected them as soon as the site was ready. Existing water and sewer lines were tapped to provide service to the expansion facilities.

Land Operations Buildings - Two administrative buildings were required to provide offices for two squadrons. The standard OPS building requested by the customer called for a 40' X 100' personnel type Pascoe building. Unfortunately, no such buildings were available in the area. A Pascoe warehouse building was used as an alternate. This building required non-standard modifications to windows and doors to adapt it for administrative use. The exterior shell was erected for both buildings and all interior partitions and utilities were completed on the first. While the completed OPS Building was adequate to its intended use, it must be acknowledged that the regular personnel type Pascoe with interior skin and insulation would be preferred.

Administrative Buildings. This line item required construction of 5200 square feet of administrative space in the form of several buildings. Most of the buildings were adaptations of the standard 16' X 32' SEA hut. One 20' X 48' wooden rigid frame building was built to serve as an air freight terminal building.

Covered Storage. A standard 40' X 100' Pascoe warehouse building was constructed to augment MAG 16 storage facilities. A small amount of fill was required to bring the site up to grade, but otherwise there were no unusual problems on this project.

Dispensary. The existing MAG 16 Dispensary was contained in three Quonset huts. To provide additional facilities and complete the dispensary complex, the customer wanted another Quonset. None were available so a "Baby Butler" was substituted. Once the building was erected the customer was, of course, pleased that it gave him more useable space than the Quonsets. The Dispensary was not quite finished at the end of the deployment. About 60 percent of the interior work was turned over to a detail of NMCB 121 for completion.

VIP Helo Pad and Engine Runup Pad. The VIP Helo Pad was a 200 ft square pad constructed on the east side of the runway in the vicinity of the command headquarters. A compacted sand fill topped with a layer of CBR was covered with a 2" layer of asphaltic concrete. A short access road made it possible to drive quickly from the pad to headquarters. The lighting for the pad was provided by the customer and installed by MCB FOUR. Surface mounted lights were used. The Runup Pad was an 80' X 130' addition to the east parking apron. It was also built with compacted CBR topped with a 2" lift of asphalt. Repeated rains at the end of the deployment made it very difficult to ready this pad for paving.

Messhall Additions. Additions to the MAG 16 messhall included a 40 ft extension to both the NCO wing and the EM wing of the dining area. A new scullery, a new dry storage building and miscellaneous interior revisions to provide increased dining capacity. The wing additions were constructed with 42 ft trusses spanning the width of the building. Small entrance porches were built on the end of each wing. The dry storage building was an 18 ft wide, wood, rigid frame structure. The frames were fabricated in a pre-cut yard, delivered to the site, and erected on a new

concrete slab. Braces and roof purlins were installed, and the roof and sidewalls were covered with corrugated sheet metal. A sliding door was hung on the exterior of the building using hardware salvaged from the Land Ops building. The Scullery addition was a lean-to frame structure, again on a concrete slab. The exterior framing of this addition was complete when the job was turned over to MCB 121.

BOQ Buildings. Three 20' X 108' BOQ buildings were requested by the customer. The requested design was essentially that of the two BOQs that were being built for the Army Support Command by MCB FOUR. This design involved conventional wood frame construction and extensive cutting and fitting. Preliminary manpower estimates indicated that it would be impossible to complete the buildings in the time allowed with the manpower available. An alternate design was presented to the customer that would allow the three buildings to be completed on time. Permission was granted to use the alternate design and work commenced immediately. The new design was still a 20' X 108' frame building, but greatly simplified. Construction of a slab on grade was followed by the erection of wooden rigid frames on 4 ft centers. After the building was braced, purlins were placed and topped with corrugated sheet metal roofing. At the same time, exterior plywood sheeting and insect screens were added to the sidewalls, so the building was very quickly enclosed. As work on the interior utilities got underway, the builders installed interior partitions and a drop ceiling. The electricians followed closely with surface mounted service common to SEA hut construction. As interior work progressed, the sidewalks were poured and the doors were hung. As work continued, it became apparent that the new design was much less expensive than the original, and certainly much less demanding of manpower. After some study, it was determined that a fourth building could be built, within the project scope and funds allotted for the job. With less than two weeks remaining in the deployment, the decision was made to build a fourth building. On the last working day of the deployment, the nylon fabric for the window flaps finally arrived. By 1600, the four buildings were complete, swept broom clean, and ready for occupancy. The total time elapsed from start to finish was 27 days.

Electrical Distribution. The tasking for electrical distribution required installation of transformers and secondary power distribution to each of the new buildings. This task was accomplished with little difficulty once materials had been received. The secondary could not be connected, however, because

there was insufficient power available on the primary feed into MAG 16. The limiting factor on the line was the size of the main feeder from the powerhouse at the Naval Hospital to China Beach. The MAG 16 feeder was tapped off this line and additional loads at MAG 16 would have overloaded the China Beach feeder. An NSA project was pending to correct this situation, but until it was changed, an alternate source of power had to be provided to each of the new buildings. Portable generators on loan from the I Corps Generator Shop were installed on pads at each transformer location feeding the new work. The generators will provide power to the new secondaries until the primary capacity could be increased.

The significant aspect of the MAG 16 expansion work was the time frame to which it was allotted. Only eight weeks remained in the deployment when the job was assigned. Work could not start on site until a MACV hold was released a week later. The job required close planning and hourly expediting to get maximum production. It was a good job to work at the end of the deployment because it represented one final tangible challenge to the men of FOUR. The challenge was met.

STEEL ARCH AIRCRAFT SHELTERS

The construction of steel arch aircraft shelters, often called "Wonder Buildings", was a departure from the routine structures erected by Seabees in the past few years. MCB FOUR was tasked to erect 20 buildings and cover them with an 18 inch thick concrete cap. The buildings are made by assembling steel arches similar to the arches in a steel multi-plate culvert. Nine arch segments are bolted together to make one rib or panel of the building. The shelter was made of 35 ribs bolted together to form a 50 ft diameter half cylinder 70 ft long. The shelters were to be erected on an existing parking apron at Marble Mountain Air Facility. Armco revetments on the apron had to be dismantled by cutting the bolts with a torch. The revetment walls were lifted away with a crane, leaving a pile of dirt to be hauled away before the excavation could begin for foundations. The soil cement and asphalt apron was broken out using a jackhammer and the footing was excavated with a small backhoe. The elevation of the top of each footing was controlled to provide a constant height foundation wall which would permit multiple use of forms. The footing was poured directly into the excavation with only a keyway formed to control elevation and tie in the foundation wall. No. 8 reinforcing dowels were inserted into the footing to further strengthen the joint with the foundation wall.

Plans originally called for grouting in the base channel at the top of the foundation wall, but this step was eliminated by welding the channel to the reinforcing chairs in the foundation walls, and pouring the wall underneath the channels. The typical crew size for the footing, foundation wall, and base channel operation was seven men. Steelwork on the shelters was handled in three phases: assembly of ribs, erection, and final bolting. The assembly phase was assigned to five crews of four men each. A crew of four assembled, on the average, 8 lineal feet of arch per day. The panels were assembled with two ribs per lift rather than the three recommended by the manual. NMCB EIGHT had learned that assembly of a third rib on the ground was extremely difficult without adequate lifting equipment. Our own experience on the third rib required on the first panel of each building supported the contention that it was quicker to make additional lifts than to struggle with a third rib in each lift. The assembly crew used tools provided in the erection kits plus two compressors and one generator to run both pneumatic and electric impact wrenches. The assembly crews provided arch panels for two erection crews of ten men. Each erection crew had a goal of erecting 20 lineal feet per day. A 25 ton mobile crane was used to support each crew and another 25 ton crane was required while erecting the first 14 L.F. of each building. After erecting 14 L.F., the building had sufficient stability to stand without the additional crane. Erection crews installed all bolts required to hold the panels in place but no tightening was done until the building was complete. The loose bolts permitted the flexibility required to fit the panels together. Experience greatly improved the performance of the erection crews to the point where erection of 30 L.F. per day was a common achievement. After the buildings were completely assembled and erected, an eight man bolting crew tightened all bolts and installed additional bolts for the forms. Inserting form bolts at this point saved the form crew a great deal of time and also eliminated the need to provide scaffolding for the form crew. While the scaffolding was in use for final bolting, the electricians hung their conduit and installed all wiring necessary for overhead lights inside the shelters. The forms used for pouring the concrete cover were 2' X 12' steel panels with a slight transverse curvature for added strength. Pours at the base of an arch on either end of a row of arches put maximum strain on the forms. When an 8 ft lift was poured, form deflection was considered excessive, so the first lift was thereafter reduced to 4 ft on the ends of the rows. After the first lift, the curvature of the arches caused the weight of the concrete to be supported by the building and the forms held well for 8 ft lifts. The common

wall between adjacent buildings was poured first to a height of 10 ft. This stem wall height was increased to 12 ft later, producing a wider work platform between the buildings. After the initial lift, the general sequence was to pour an 8 ft lift on each side of a building and strip the forms the following day. After the stem walls, two 8 ft lifts on each side plus a cap on the top were required to complete the cover. The two form crews of 4 men each got occasional help from the erection crews in order to keep up with the pace of the pours. The minimum thickness of the concrete was 18" and cylinder breaks consistently indicated a 28 day strength of over 400 PSI. A concrete pump was used as the primary means of placing the concrete. A boom truck was provided to handle the hose but hydraulic failures put it on deadline almost immediately. The hose was then rigged along a series of hangars bolted to the arches. Hose sections were added or removed to vary the location of the delivery. The concrete crew then struggled with the hose continually to get it in place, change its location, or even keep it in one place. Moving the hose to the other side of the building was a particularly difficult and time consuming task. If the boom truck had worked properly it would have eliminated all man-handling of the hose and speeded the job considerably. Proper operation of the concrete pump was critical to the success of the "Wonder Building" job. An experienced man was given sole responsibility for the machine. He kept it meticulously clean, well lubricated and closely watched. Close attention to the manufacturer's operating recommendations was the key to dependability. No serious problems developed in the time the concrete pump was on the job. The original plan was to work two or three buildings at a time, moving to the next building in the row only when forms used on the first buildings became available. With this system full protection for aircraft stored in the shelter at night was soon provided on one end of the row while the other end was completely unprotected. This was not satisfactory since protected parking space for helicopters was so badly needed. To correct this, it was decided to pour the stem walls to a height of 12 ft on all buildings as soon as possible, and then double back to finish the rest of the cover. This worked very well and the thick concrete stem wall between any two buildings provided even more protection than had been provided by the Armco revetments. With the stem walls poured it was then possible to erect Armco revetment to enclose the rear end of each shelter. This provided almost complete protection while concrete pouring proceeded on other buildings. The pace of the "Wonder Building" job increased steadily as the crews gained

experience in their assignments. By the time the third or fourth building was completed the men had worked out the bugs in their work procedure and production rose sharply. On the last two buildings erected, the two erection crews combined placed a total of 74 L.F. of steel in one day. In the second to last week of the deployment, the concrete crews set a record by placing 1,790 C.Y. of concrete in a 6 1/2 day week. In that week, concrete was placed by pumping, by using a 3/4 yard concrete bucket, and by straight dumps into footings.



3rd MP berthing area after ASP-1 explosion



The 3rd MP Administration building (left) was established as MCB FOUR Control Center for reconstruction



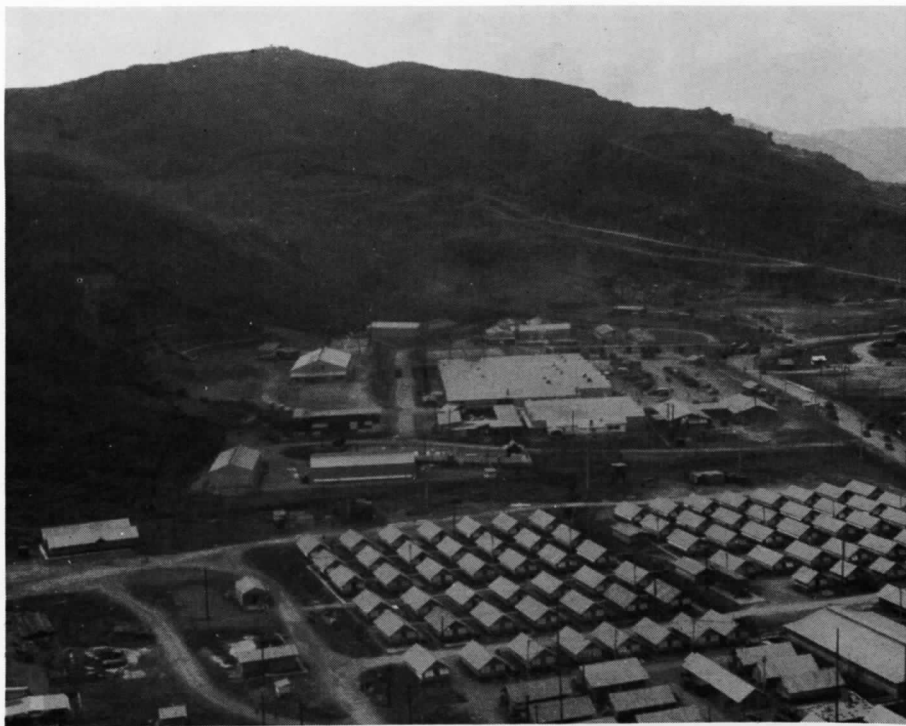
Aerial view of 3rd MP/III MAF Brig cantonment after restoration



Freedom Hill theater was totally destroyed by ASP-1 explosion of April 1969



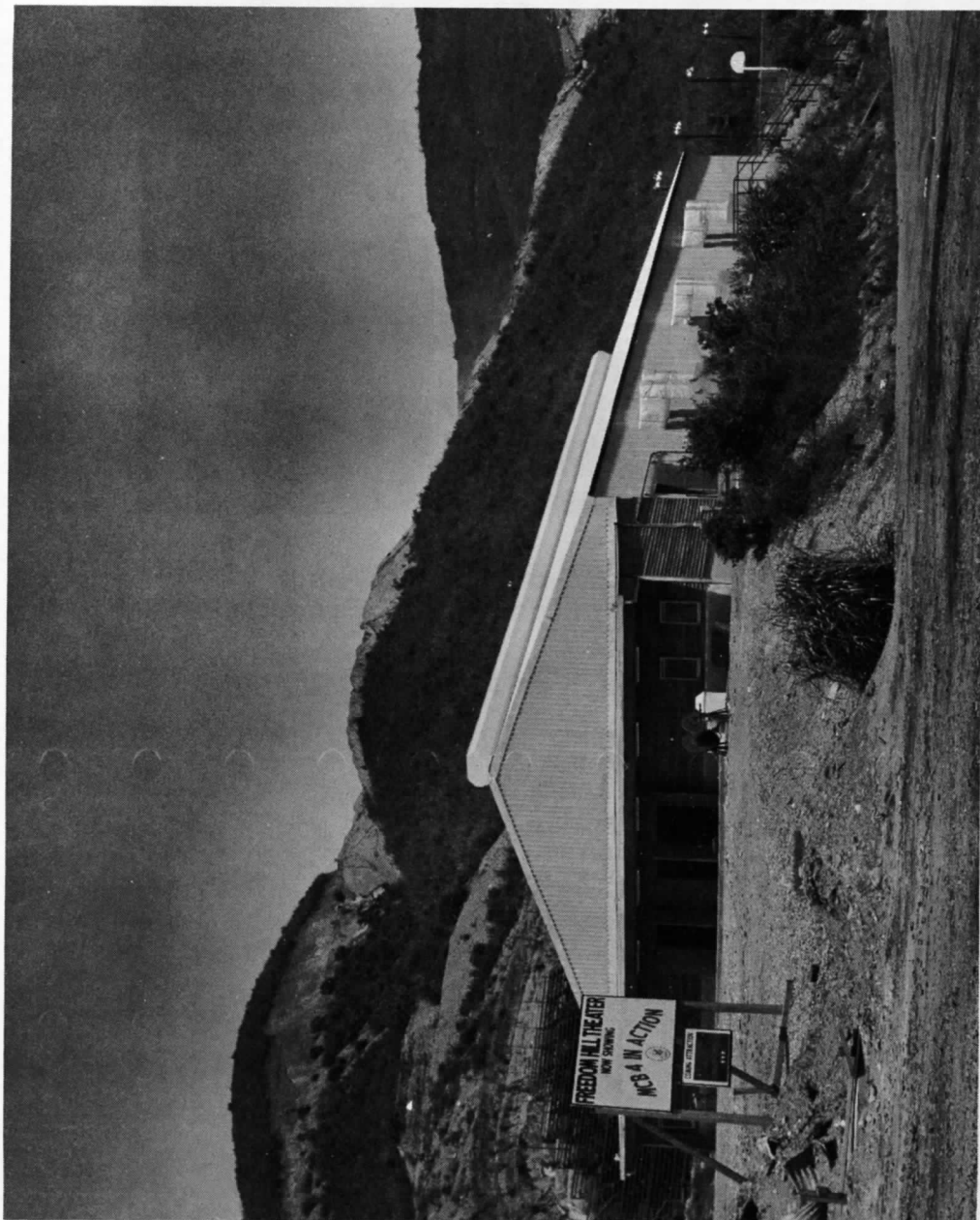
Framework is complete on the new Freedom Hill theater



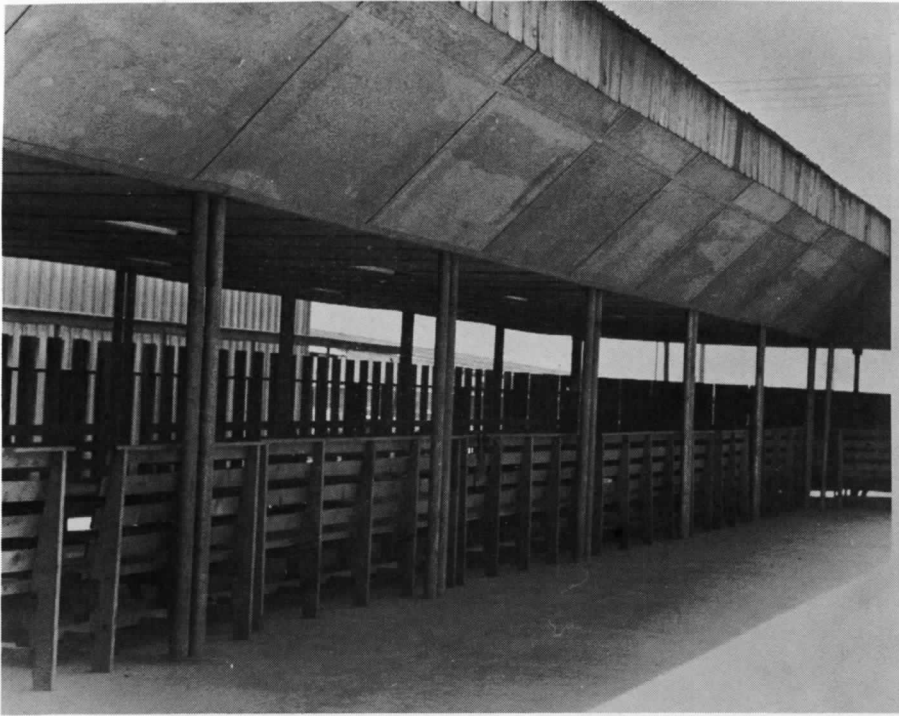
Freedom Hill R&R Center after restoration



Acoustical panels were hung inside the new theater to develop desired acoustics



Freedom Hill Theater



A project dear to the heart of SEABEES and MARINES was the reconstruction of the Freedom Hill Beer Garden



Salvaged material was used in the reconstruction of the Handball courts at Freedom Hill



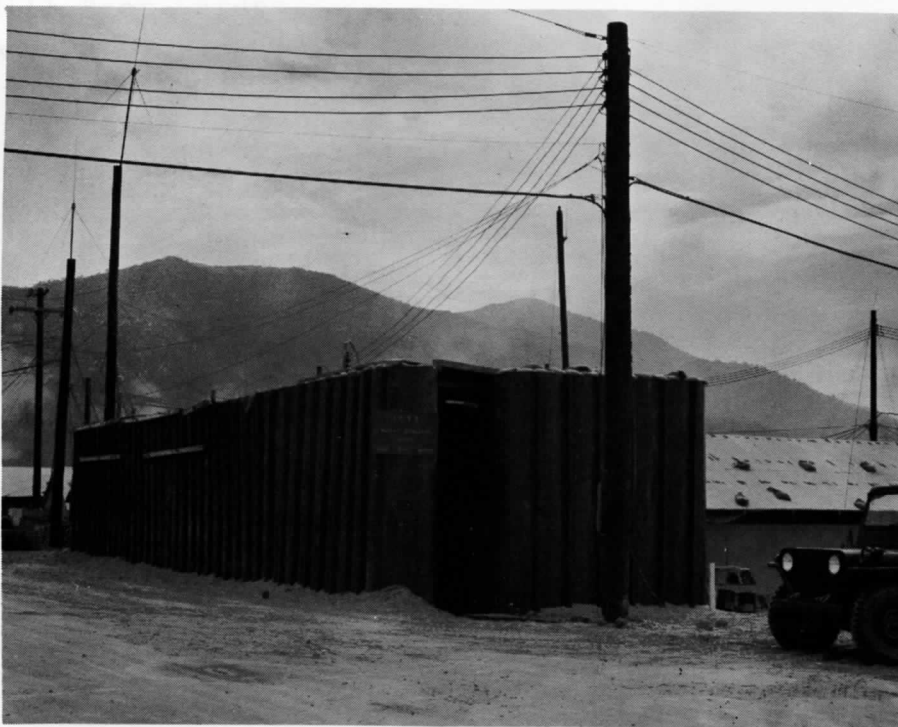
Damaged ammo storage magazines after the ASP-1 explosion



III MAF Headquarters, Camp Horn-Damage from ARVN ASP explosion was repaired by MCB FOUR



The relocatable Lewis building at Naval Hospital was easily erected without special lifting gear



The 95th MEDEVAC bunker was protected by Ammi revetment



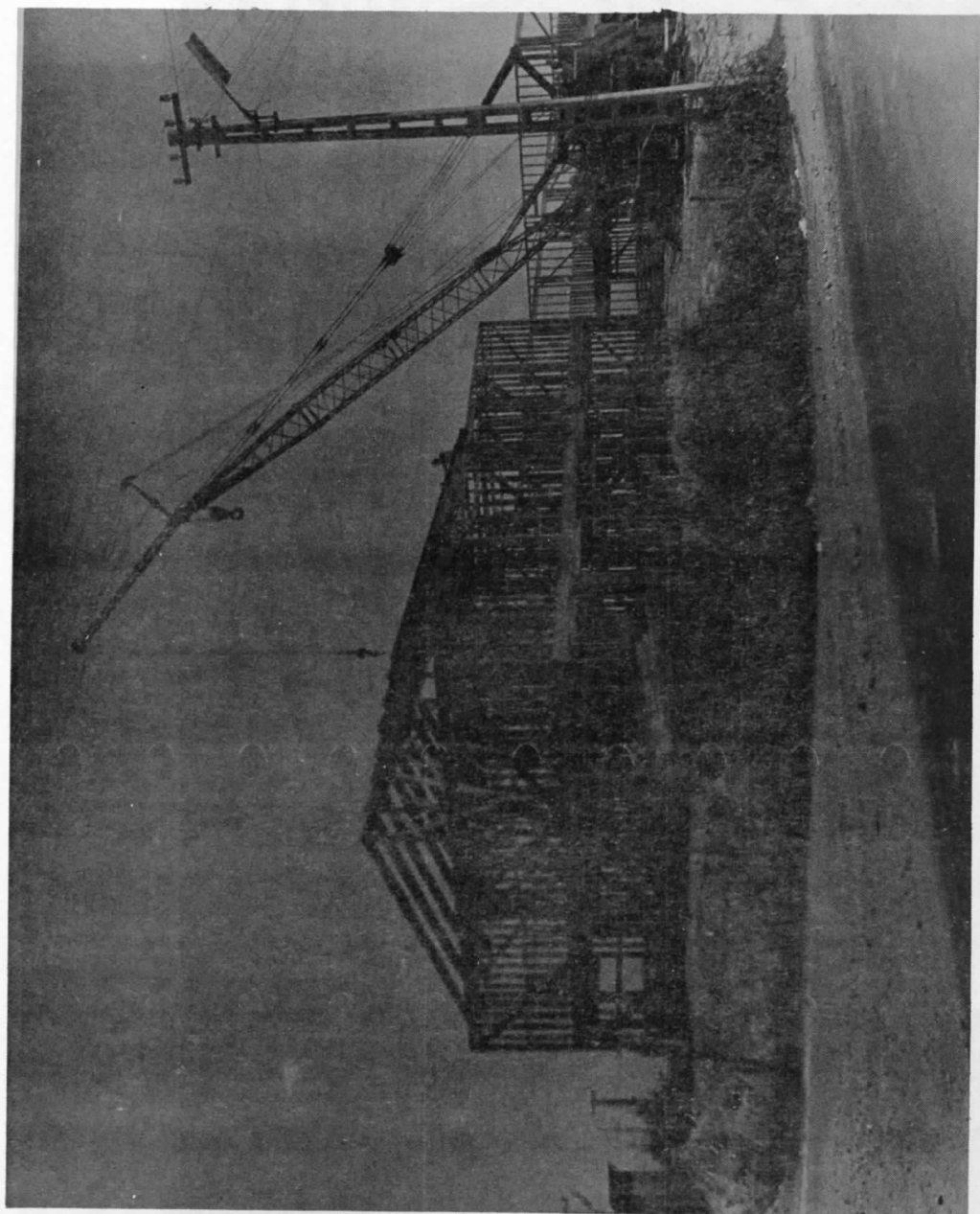
20'X108' two-story BOQ built for the U.S. Army Support Command, Danang



III MAF helopad near the Ferry Landing in East Danang



This 60 ft rapelling tower at Marble Mountain was built for the Special Forces to maintain their climbing proficiency



IRD building under construction in Danang

The customer began preparation for a dedication ceremony as the SEABEES put the finishing touches on the interior



Pouring second deck in IRD building, Danang



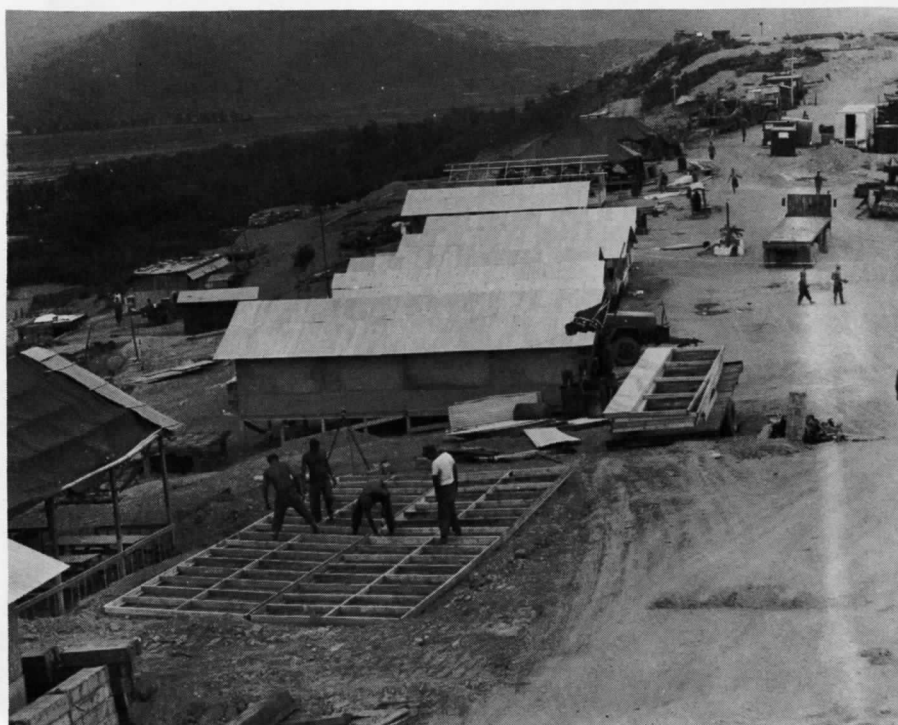
The customer began preparation for a dedication ceremony as the SEABEES put the finishing touches on the interior



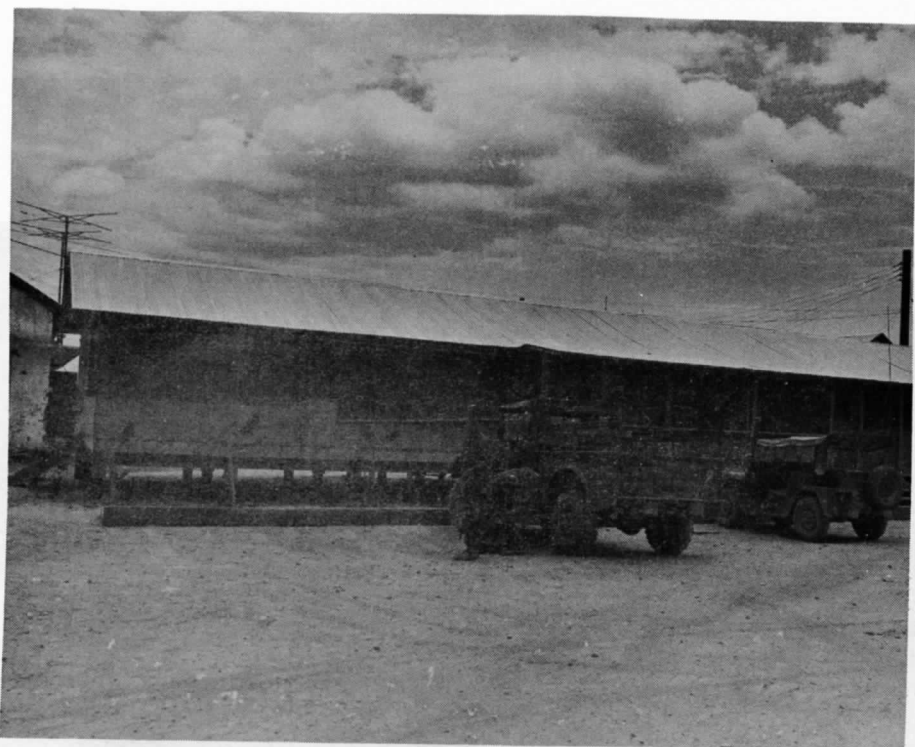
The two buildings in the IRD complex will provide classroom and administrative space for training Vietnamese civilians in vocational skills



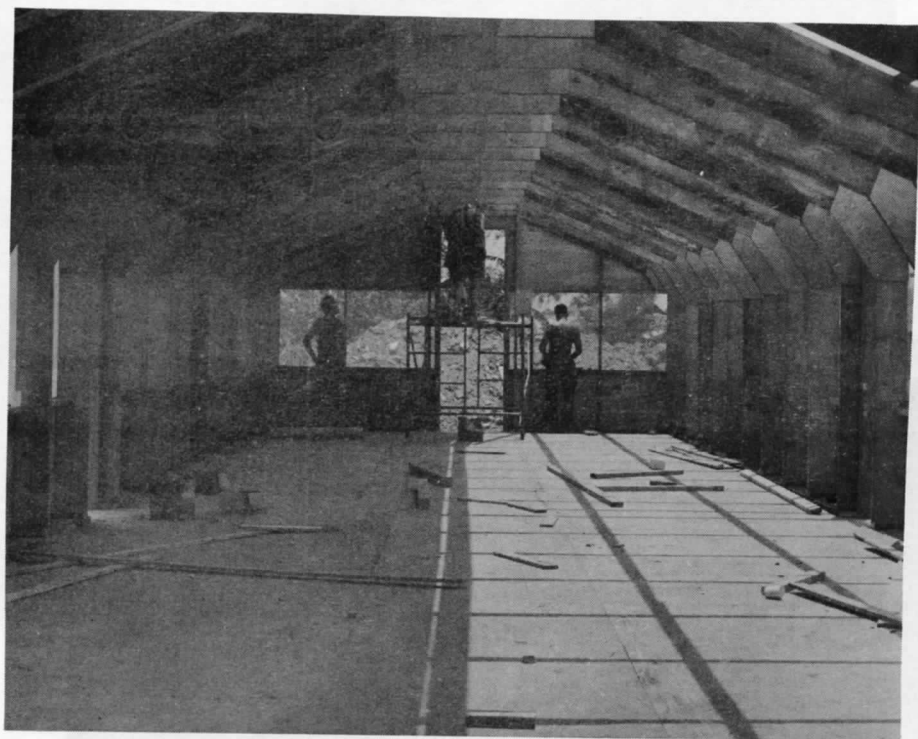
A SEABEE first - The well rig was disassembled and the pieces flown to Thoung Duc. The crew then reassembled the rig and drilled the well



Detail Golf constructed SEA huts, Messhalls, and utility systems for the Marines on Hill 65



Administration Building - CAG II



Berthing hut - CAG II



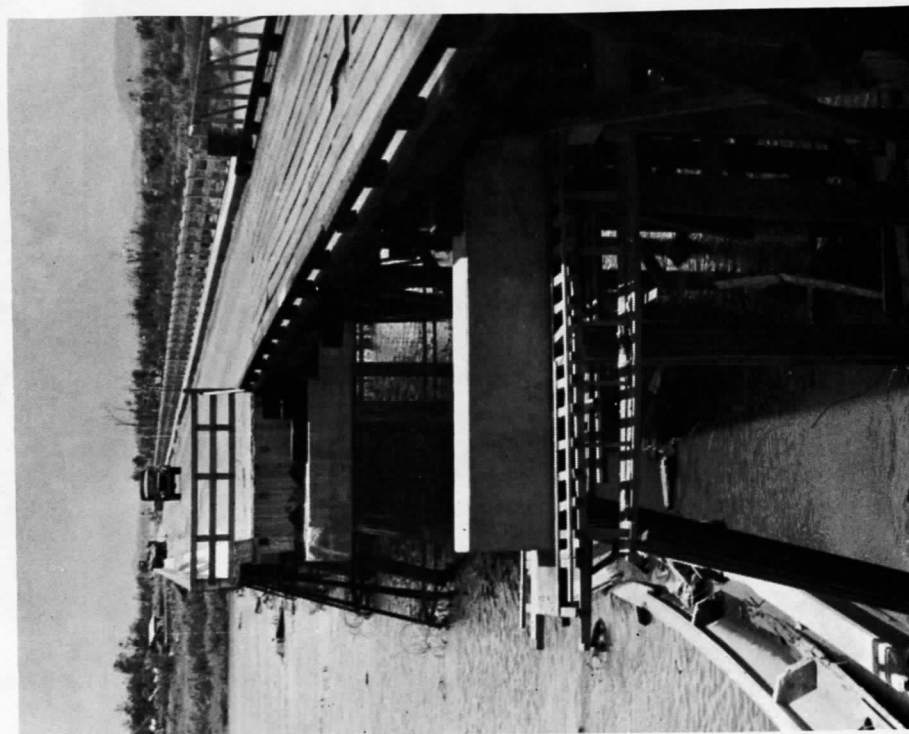
Vehicle maintenance garage - CAG II



Messhall - CAG II



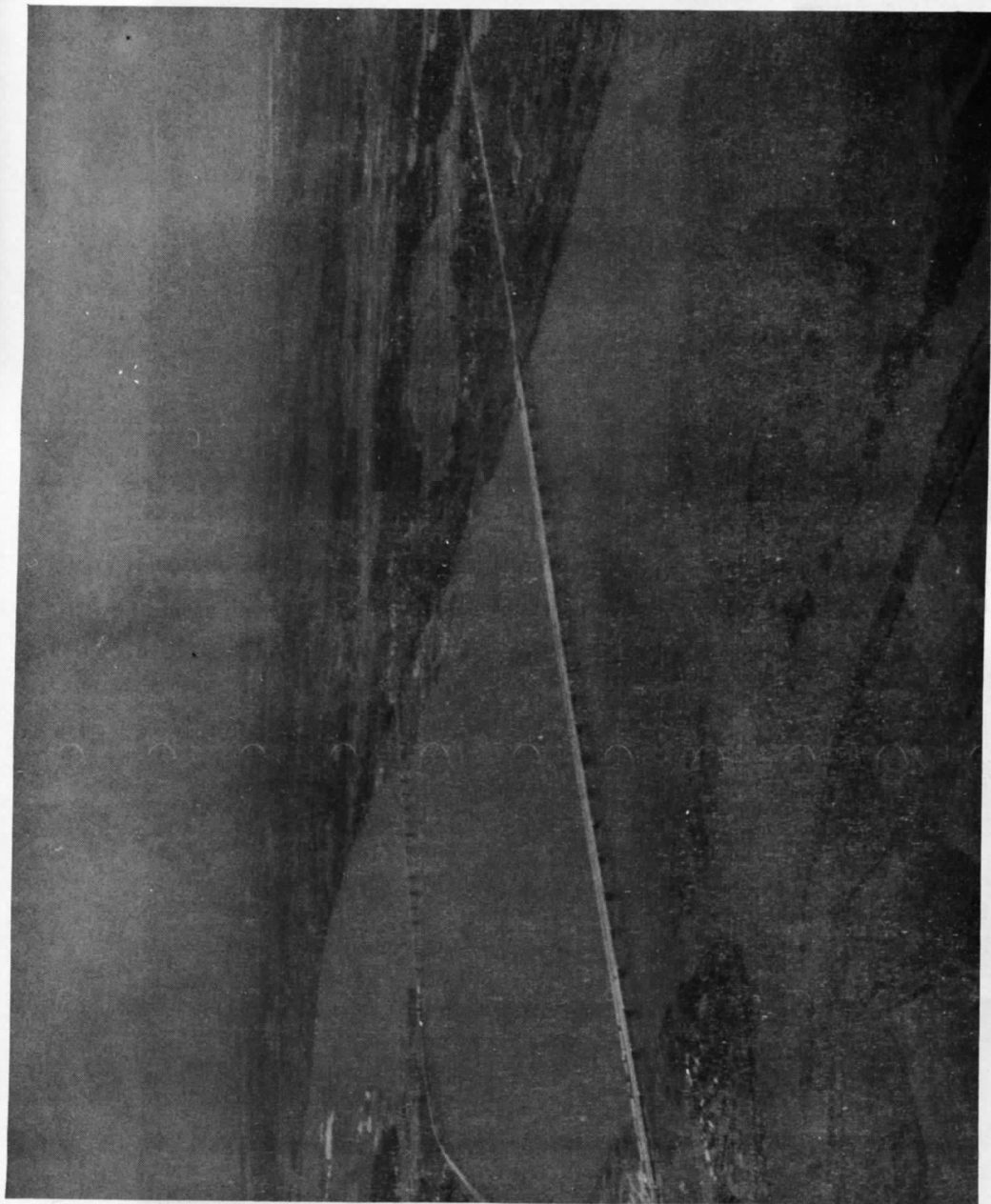
CAG-II--The site of an old French Army compound was rebuilt as a headquarters for the U.S. Marines Second Combined Action Group



Cau Lau Bridge-temporary timber bridge and repaired pile cap complete



Cau Lau Bridge-Threading post tensioning cables as the last edge beam is lowered into place



CAU LAU Bridge - A vital link on QL-1 south of Danang



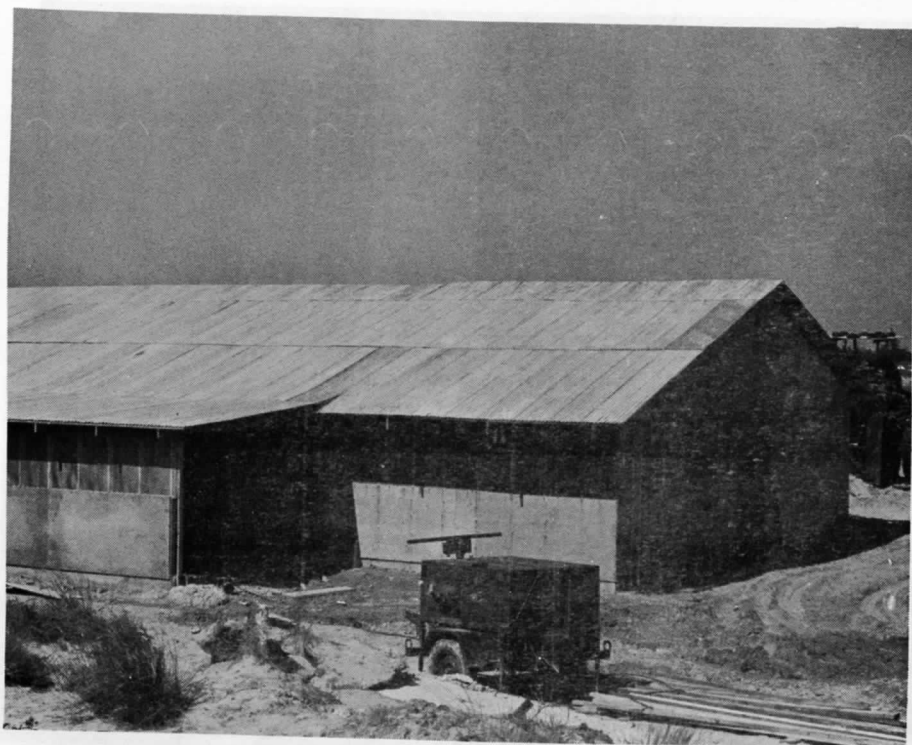
Cholon Building-A European pre-engineered building erected for Regional Forces



Cholon Building-Regional Forces compound at Dien Ban



Detention Center, Hoi An-Interior of detention barrack barracks



3rd Battalion 2nd ROK Marine Brigade, Messhall



Than Quit Bridge-Blown by enemy sappers



Than Quit Bridge-New piles driven, ready to receive pile cap and stringers



Than Quit Bridge-Repairs complete



Cooper Bridge-Replacing bridge decking



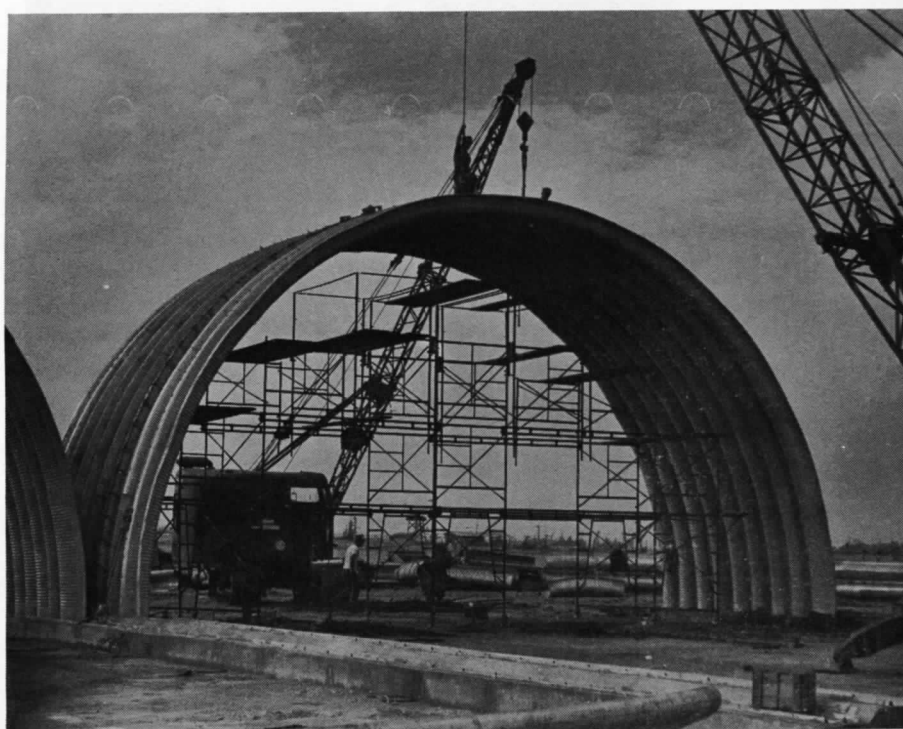
MAG-16-New seahut cantonment as a part of MAG-16



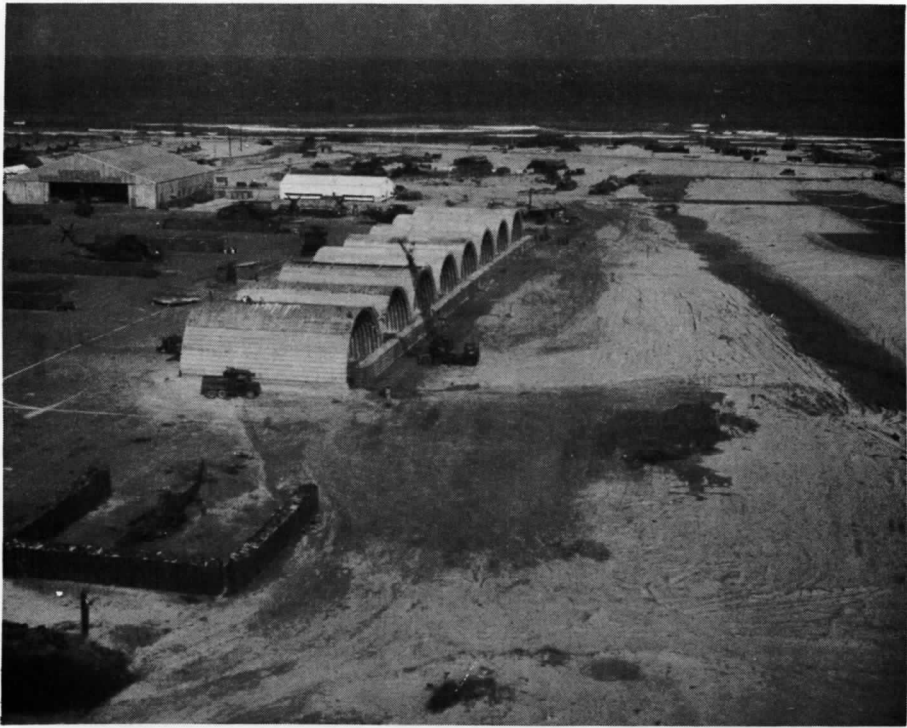
MAG-16-New cantonment completed directly across the road from Camp Adenir MLO Yard



MAG-16 Expansion-Four new BOQ buildings were completed in only 3 weeks



MAG-16 Aircraft Shelters-Arched ribs of "Wonder Buildings" are lowered into place



MAG-16 Aircraft Shelters-Concrete caps and Armco revetment ends complete the protection for the CH-53 helicopters



MAG-16 Aircraft Shelters-MCB FOUR's concrete batch at lower center was established to batch concrete for the "Wonder Buildings"

RECOMMENDATIONS & LESSONS LEARNED SUMMARY

RECONSTRUCTION OPERATIONS

Reconstruction of facilities damaged or destroyed by the explosion of ASP-1 in late April constituted the major portion of MCB-4's work during the first three months of the deployment. During the course of this major battalion effort, it became apparent that rehabilitation of heavily damaged, but perhaps, still repairable structures was not always the best solution.

Immediately following the disaster, a great deal of emphasis was placed on rehabilitation of heavily damaged structures with little thought given to the efficiency of the manpower utilization.

Simple, relatively inexpensive structures such as SEA huts that had suffered 40% - 50% or more damage, required quadruple normal construction time for rehabilitation. Minor material savings were gained by large expenditures of manpower. A better approach in cases such as this is to demolish the heavily damaged structure, erect the replacement structure, and if manpower availability permits, attempt to salvage material later, or if necessary, simultaneously with a crew separate from the reconstruction crew.

Complex and expensive structures including pre-engineered metal buildings and large woodframe structures deserved special consideration since for these even initial construction requires large expenditures of manpower. Careful judgment had to be made relating the values of manpower expenditure versus material savings.

DEFINITION OF PROJECT SCOPE

In all construction but especially in salvage type operations, it is extremely important to reach an exact definition of project scope with all concerned parties. Lack of project definition can lead the customer to be tempted by the manpower he suddenly has at his disposal. He then desires not just restoration, but improvements to original facilities which he feels are vital to his mission and morale. Generally, the improvements the customer desires are important and reasonable, but are perhaps not so vitally important when considering the requirements of a major construction operation similar to what followed the ASP-1 disaster.

Compliance with the customer's desire for improvements can drain manpower from other critical projects while non-compliance creates feelings of ill-will between the battalion

and the customer. Careful and firm definition of project scope before construction begins can avoid both problems.

ANALYSIS OF CUSTOMER REQUIREMENTS

During the entire 1969 Vietnam deployment, MCB FOUR worked in support of the Republic of Korea Marines in the Hoi An area south of Danang. Several facilities were also constructed for use by the Vietnamese. These projects underscored the need for careful analysis of the customer's requirements during the project planning stage.

On most projects, considerable savings in time and material are realized through the use of standard ABFC or TSFC structures. Often, however, these standard structures are of limited use to people with a way of life different from our own. Generally the mistake was to construct a structure more elaborate than was actually required by the customer. In one case, a standard 250 man galley was constructed complete with plumbing and electrical systems when actually, all that was required was an enclosed cooking shed.

It is wasteful in terms of manpower and material to construct a facility that will receive little use or go entirely unused because it does not suit the customer's needs. Careful attention to actual requirements is important in all construction, but is particularly important when the construction is for a customer for which the ABFC - TSFC structure were not designed.

WONDER BUILDINGS

MCB-4, like MCB-8 and MCB-58, became involved in the construction of the hardback aircraft shelters commonly referred to as Wonder Buildings. Following MCB-8's recommendation, MCB-FOUR crews achieved best results when only the first section of a shelter was erected in a three ring increment. The remainder of the structure was erected in two ring increments, instead of using all three-ring sections as was recommended by the manual. With the limited amount of equipment available to the battalion, the ease of handling the two ring increments more than made up for the additional number of lifts required to erect the structure. Problems were encountered when it was attempted to use interchangeably panels fabricated by U. S. Steel and Bethlehem Steel. Comparable panels were of different lengths and curvatures. Bolt holes of one manufacturer's panel were impossible to align with

those of the other. It is recommended that either only one brand be procured or that the quality control of the manufacturers be improved sufficiently to allow interchangeability.

Although the concrete pump supplied by 3NCB performed well, the hydraulically operated boom truck supplied to simplify the relocation of the hose was deadlined soon after it was put into use. It was not suited for heavy construction use and its deficiencies are discussed in the equipment summary.

Without the boom truck, a considerable expenditure of time and manpower was required to relocate the hose. A boom truck on a military chassis with an integrally mounted concrete pump would be an invaluable aide in making repetitive vertical pours, "2nd deck" slab pours and even in pouring large slabs on grade.

The most significant lesson learned on the concrete pump was to follow the manufacturer's recommendations to the letter. Any attempt to deviate from specified operating instructions generally resulted in a clogged pump. Strict procedures, meticulous cleaning, and constant attention to the machine were the keys to the success of the concrete pumping operation.

ADVANTAGES OF PRECUTTING

On Hill 65, the value of precutting and prefabbing was reemphasized. The logistical problems involved in supporting far flung details are great. Hauling capability is heavily taxed by the all-day operation required to provide material support, so any system which results in a reduction in material to be hauled is invaluable. The bulk materials for the SEA huts, showers and heads on Hill 65 were delivered to a pre-cutting yard adjacent to the Delta Company office at Camp Adenir. There, the bulk materials were cut and banded into bundles which contained one individual SEA hut, shower, or head. All studs, rafters, plates, purlins, joists and fire-blocking were included in each "kit." Banded in this manner, material for sixteen to twenty SEA huts, including plywood, could be handled by two low-boys instead of the three required to haul the bulk material. The advantage lies chiefly in eliminating the hauling of waste. Moreover, precutting also reduces prefabbing and erection time at the detail site, resulting in a further reduction in logistical problems.

TIMBER OBSERVATION TOWERS

Not uncommon to the Vietnam Seabee Battalions is the task of constructing timber observation towers in areas which are either inaccessible to Battalion equipment or are considered tactically insecure. Under normal weather conditions, a CH-54A Flying Crane can be used to transport these towers to outlying combat bases. The ability to totally construct the timber towers within a secure area, close to the material stocks, cuts down the mandays required to build each tower and considerably reduces the time spent at the drop site during which the construction crews could be exposed to enemy sniper fire.

A number of variables affect a helicopter's capability to carry loads at low altitudes, and a few of these variables can be controlled by the construction crews themselves. The distance the helicopter must fly between the pickup site and the drop site, coupled with the required hover times at both points, seems to be the major factor limiting the external load capacity. The time of day/air temperature affects the lifting capability but is not nearly so critical as the distance to the drop site. Once the distance is known, the resulting weight limitation controls the design of the timber tower. It is then up to the Battalion to choose a tower design which meets the height requirement and is no heavier than the external load capability of the helicopter.

This Battalion's experience has shown that a three legged tower base with a three sided tower house is a much more flexible design than the four legged tower with a four sided house, especially for tower heights of 30 ft and greater. It is noted that CH-54A Flying Cranes will normally not carry an external load over 18,000 lb. The following comparison of 4 and 3 legged design might be more useful:

<u>4 legged, 4 sided</u>	<u>Weight</u>	<u>Max Range</u>
50 ft	21,600 lb	NA
40 ft	19,200 lb	NA
30 ft	17,700 lb	7 miles
<u>3 legged, 3 sided</u>		
60 ft	17,500 lb	9.2 miles
50 ft	15,200 lb	29 miles
40 ft	14,300 lb	37 miles
30 ft	11,700 lb	48 miles

STANDARD PERIMETER BUNKERS

When NMCB FOUR arrived in Camp Adenir, most of the perimeter bunkers were of a two level construction. The top level consisted of a watch tower set on four posts. Sandbags fortified the top level and also formed the walls on the bottom level, which was the fighting position. The sandbags gave adequate protection, but rapidly deteriorated and required periodic maintenance. To solve this problem, the sandbag walls were replaced by two foot wide wooden revetments constructed of 4 X 4's, 2 X 4's and 2 X 12's. The revetment was lined with plastic on the inside to prevent seepage into the bunker. They were then filled with sand to form an adequate barrier against gun fire and shrapnel. Olive drab green paint was added for appearance and protection of the wood.

Standard fighting positions which replaced old sandbag types, were also added to the defensive line using the same basic idea. They were basically rectangular, sand-filled, wooden revetments with inner dimensions of 4 X 8 feet.

It is interesting to compare the cost of these two structures to structures of the old sand bag types. Approximately 3,000 sandbags (paper type) were used in each perimeter bunker. At 22¢ each, this amounts to a dollar value of \$660. Assuming replacement is necessary twice a year, the yearly cost is \$1,320.00. Wooden revetments for the bunkers range in cost from \$100 to \$150 each. Some were in service as long as 8 months upon MCB FOUR's departure from Vietnam and were still in excellent condition.

The same savings are apparent in comparing sand bag fighting positions to wooden positions. With approximately 1,500 sandbags in a sandbag position, the dollar value is \$330. Assuming again that replacement is necessary twice a year, the cost is \$660. A similar wooden position costs \$115. Again, the durability of these wooden revetment fighting positions is outstanding.

The resulting dollar savings, based on maintaining 12 bunkers and 22 fighting positions of the wooden type, would be approximately \$20,000.

DETAIL ECHO

During the 1969 deployment to Vietnam, MCB-FOUR sent a 70 man Detail Echo to Quang Tri to operate an asphalt plant and pave QL-1. In previous years, large groups of one battalion's

personnel were sent TAD to other battalions when additional capabilities were needed in a given area. Although the LOC program construction was under the operational control of the 32ND NCR, Detail Echo remained a part of MCB FOUR and was never TAD to a northern battalion. Experience has shown that there are advantages and disadvantages to the detail concept.

The major advantage is that the personnel of the detail remain an integral part of the parent battalion. They are assured of equal opportunities for shipping over, extensions, and other long range battalion administrative programs. Also important, performance and morale tend to remain higher because the men feel that they and their parent battalion will receive credit for the detail's accomplishments.

The major disadvantage is one of logistics. Critical spare parts, tools, and consumables often take several days to reach the detail site from the parent battalion. This particular problem can be eased by arranging for a nearby battalion to support the detail in critical areas, and then allow the local battalion to replenish using the parent battalion's funds. In Vietnam, however, the availability of a part is often more crucial than the funds. It takes a tremendously cooperative spirit for a mechanic to release his last available part in return for nothing more than the assurance that a new one is on order. Regardless of arrangements, the performance of the detail's mission is affected by the command interest of the local battalion. MCB-FOUR is grateful for the interest shown in Detail Echo first by MCB-128 and then MCB-74. Their support was very helpful in the timely accomplishment of Detail Echo's paving schedule.

ASPHALT PAVING MACHINE TRANSPORTATION

During MCB-FOUR's paving operations in both the Quang Tri and Danang areas, security considerations demanded that the asphalt paving machine be transported daily between the base camp and the job site. The only equipment available at the time for paver transportation was a 10 ton tilt trailer that proved too light to handle the paver safely, and a standard low boy trailer which had ramps too steep for the paver to climb. An excessive amount of cribbing and planking was required for loading and offloading. This task proved time consuming and completely unsafe. Therefore, it is recommended that a heavy duty, low-slung trailer be augmented for asphalt paving machine transportation.

As a temporary expedient, Detail Echo rigged a ramp of steel channel. The center of each channel length was pinned to the end of the lowboy so it could pivot like a child's seesaw. The paver climbed the low sloped ramp to the lowboy and as it crossed the pivot the ramp was tilted to a horizontal position with the trailing end up clear of the road. This method reduced loading time to 3 minutes. A low slung trailer would still be the preferred solution.

EXPEDIENT ROADWAY

Many mechanical problems with the Battalion's eight transit mix trucks were due to their frequent usage over rough terrain. Transfer cases suffered particularly when the TMs, which were designed chiefly for "around town" operation, were used for hauling to sites in sandy areas considerably removed from a road. Even with four-wheel drive, the trucks would bog down. Attempts to drive the vehicle out under its own power, often unsuccessful, put a severe strain on the entire drive-train. Further, if no equipment was available capable of pulling the TM out of the sand, it was necessary to dump a valuable load of concrete.

Welded wire mesh provided an effective, expedient and commonly available solution to the problem. 2 X 2 wire mesh was laid down on the sand to serve as a hasty roadway. The weight of the TM was distributed sufficiently by the mesh to prevent bogging. The undamaged wire mesh was used on a later job.

EXCAVATION IN SAND BELOW THE WATER TABLE

With the equipment currently available to a battalion it is extremely difficult to create a usable facility if construction of the facility demands excavation in sand below the water table. It is impossible to dig a small hole without the use of sheet piling and any excavation at all becomes a major project.

In order to cope with this problem, equipment for a well point system including pumps should be made available as augment equipment. In addition, battalions should be supplied with at least two 600 gpm pumps which would enable them to dry out an excavation once it was made. Currently the battalion has no such capability.

POWER TOOLS AND SPARE PARTS

Pneumatic hand tools proved extremely useful throughout the deployment and were indispensable during the monsoon season. Electric hand tools are generally less durable than their pneumatic counterparts and are of little value for outdoor use during rainy weather. Gasoline powered skillsaws, chain saws and drills, although not as durable as comparable pneumatic tools are also well suited to wet weather operation. They possess the additional advantage of requiring no external power supply making them ideal for use in isolated areas.

Vital as power tools are to the mission of the battalion, downtime of these tools must be kept to a minimum. Yet, spare parts are at best difficult to obtain for all types of power tools. More emphasis must be placed on the maintenance of a stock of spare parts in the consumable allowance to support the tools in the field. Tools supplied in special erection kits such as impact wrenches, Huck and Tek guns, and pop rivet guns posed particularly costly problems. For example, complete erection kits were made available for the construction of the Wonder Building Aircraft Shelters. Included in the kits were electric and pneumatic impact wrenches which were critical to the construction of the shelters. When those tools went "down", there were no spare parts. To keep the project moving, additional erection kits had to be drawn, complete with a new supply of power tools. In this case, the obvious solution is to include spares in the special kit along with the tools.

ASPHALT PLANT

Considerable downtime on plant components was caused by the extreme amount of dust to which the equipment was subject. To eliminate this problem, it is recommended that plants of the 180 Ton/Hr size be purchased with fully enclosed electric motors for all drives. In addition, the motor controllers and breakers should be equipped with various sizes of heaters to cover an operating range from 70° to 150°F. It is also recommended that a water spray dust collector be used to reduce the dust problem. Considerable downtime could be eliminated if known high failure parts were stocked with the Battalion. The compatibility of the asphalt plant engine to the engine of a TD-20 bulldozer for which parts are available greatly reduced the parts problem.

CRANE OPERATIONS

Since about three years ago, when the Basic Crane Courses were dropped from the NAVSCON Curriculum, there has been a shortage of men with even an elementary knowledge of crane operation. During this period of time, the gap has been bridged by the D.P.P.O. Program sufficiently to get the job done. However with the reduction of the D.P.P.O. Program and the transfer of qualified Navy Career Petty Officers, the ability of the battalion to train crane operators on the job site is going to be limited. It is highly recommended that NAVSCON re-establish the Basic Crane Course in the "A" School Curriculum.

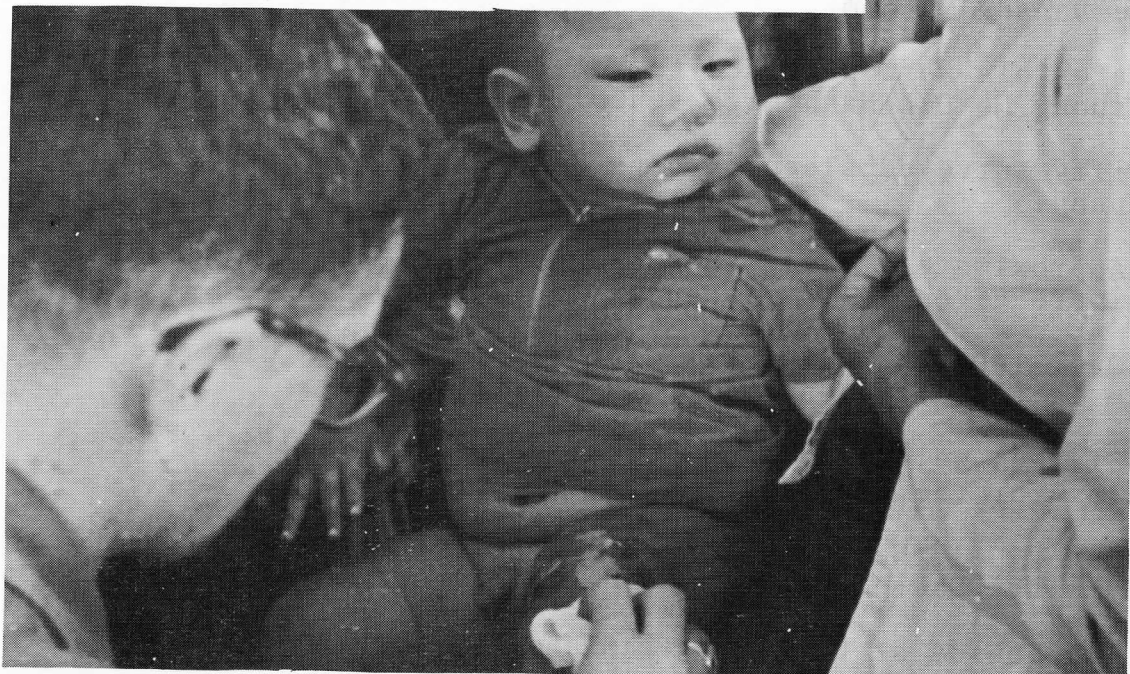
SOIL CEMENT EQUIPMENT

Soil cement operations are highly dependent upon the operation of the pulver-mixer and the cement spreader, but problems exist concerning their usage. First, there are no classes to train equipment operators in the use of these machines. It is recommended that such classes be established. Second, extended outdoor storage of this equipment results in damage to many of the bearings. Covered storage should be utilized for periods of inclement weather or during long-term storage. Third, a serious repair parts problem exists concerning the pulverizer in Vietnam because many different types are currently in use. Standardization of pulverizers is recommended, but meanwhile, known high failure parts should be stocked and transferred to the operating battalion along with the machine.

LESSONS LEARNED

Particular attention should be paid to the Lessons Learned section in all battalion deployment completion reports. Over and over, we find ourselves "re-inventing the wheel". The "Naval Construction Forces Lessons Learned Manual" published by NAVFAC in March 1969 provides an excellent solution to the problem. It is recommended that the compilation of lessons learned in the manual be updated annually and circulated in a format suitable for loose-leaf binding.

CIVIC ACTION SUMMARY



While deployed at Danang, U.S. Naval Mobile Construction Battalion FOUR's Civic Action Program consisted of the following projects:

1. A two building complex was completed in a joint effort with the people of My Te. It will serve as a CIDG building and as a meeting place for the Chief and people of the village. We furnished the materials and the people in the village provided the labor.
2. The battalion provided cement, lumber, plywood, nails and windows to enable ARVN soldiers to complete construction of the ARVN Dependent School at My Khe.
3. Six operating rooms were renovated at the ARVN Duy Tan hospital. Six thousand square feet of floor tile was laid in the receiving ward. Six air conditioners, one well pump and two sterilizers were repaired.
4. Five hundred and fifty cubic yards of dirt and two culverts were placed in a gully to make another entrance to the China Beach Orphanage.

5. A berm enclosure for a new refugee village was constructed two miles south of Marble Mountain.
6. Seventy-five yards of concrete was poured to make sidewalks for the Amputee Hospital located near III MAF headquarters.
7. Forty-seven yards of concrete was poured to make sidewalks at the Danang Museum.
8. Materials were provided to complete an additional room to the Truong Ho-Dac Hanh high school in Danang.
9. Fifty surveyed sleeping bags were given to the Boy Scouts of Danang.
10. Approximately three thousand pounds of English school books were given to the language center of Danang.
11. Over 100,000 board feet of scrap lumber was given to people in the different villages for fire wood.
12. Sixteen well rings and cement were provided to different villages for the construction of wells.
13. Money, clothes, toys, food, lumber, rebar and swings were given to the Sacred Heart and the China Beach Orphanages.
14. Two houses at the Christian and Missionary Alliance were rewired.
15. MCB FOUR Seabees landscaped the Saint Paul Hospital.
16. Seventy pounds of toys and clothing were given to Madame Lam to given to the Buddhist Orphanage of Danang.
17. A Scholarship Fund was established for the support of ten children at the China Beach Orphanage. Approximately \$350 was contributed to the Fund.

U.S. Naval Mobile Construction Battalion FOUR carried on a vigorous Medical Civic Action Program. During the deployment the MEDCAP & DENTCAP teams worked in the following areas: My Te, Dong Giang, Nai Hiem Dong, Thieu Binh, Da Me, Bien Ky and the Stella Maris orphanage. Over seven thousand people were given medical treatment and over eight hundred people received dental treatment. Fifteen hundred pounds of non prescription medical and health aids have been used in the MEDCAP operation. Over five hundred pounds of hand soap was distributed to the people of the different villages. A program was carried out to train nurses in the different villages to administer medical treatment. As a result of treating the people, a closer bond of friendship has been established.